

A NEW GATE-TOWER TYPE IN PANNONIA INFERIOR

THE NORTHERN GATE OF ANNAMATIA

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Roman forts can several times be dated only on the basis of the ground-plans of their gate-towers.¹ This observation is true in the case of the forts in the Pannonian provinces as well. Here the earlier hypothesis that most of the Pannonian earth-timber *castella* were built into stone only after the Marcomannic wars on the basis of the gate-towers (projecting in the ratio 1/3:2/3 from the face of the fort wall) was confirmed by archaeological evidence in several places.² In this paper we publish an earlier unknown gate type from Annamatia (Pannonia Inferior, Baracs) which was uncovered in the years 2000–2001.

The antique Annamatia lies on the Eastern Pannonian limes, south of Intercisa (*Fig. 1*). The first archaeological investigation of the area was begun only in 1999 with the support of the Pázmány Péter Catholic University and the Intercisa Museum.³ The antique literary sources only mention the fort (*It. Ant.* 245, 2, *Tab. Peut. Seg. IV, Not. Dig. occ. XXXIII, 95, Geogr. Rav.* 220, 2). The *praetoria* side of the fort is almost completely missing because the Danube has eroded its eastern part. During the excavations between 1999–2004 we uncovered the SW and the NW angle towers and the northern gate (*Fig. 1–2*), as well as a short section of the western and southern fort wall. The excavation of the principia has also begun in 2002.⁴

Garrisons: 1st c. ?

106–118/119 cohort I Lusitanorum (LÖRINCZ 2001, 38, No.30)

118/119–180 cohort I Alpinorum eq. (LÖRINCZ 2001, 27, No.1)

180–260 cohort milliaria Maurorum (LÖRINCZ 2001, 38, No.33)

equites promoti (*Not. Dig. occ. XXXIII, 36*)

THE NORTHERN GATE

The *porta principalis sinistra* was investigated in trench V (5 × 1 m, N-W 2') and in sections II, IV–V (5 × 5 m) (*Fig. 2*). In trench V we found a section of the *via principalis*. The road-level. was 109.35 m a.s.l. It had a thick (40–60 cm) gravel layer and had been renewed twice. Above the gravelled road-level a yellow clayey

¹ BECHERT 1971; LANDER 1984; JOHNSON 1987, 93–112.

² BECHERT 1971, 242–259; GABLER 1977, 145–175; GABLER 1989, 66–67, 642–645; J. FITZ–A. MÓCSY (eds): *Pannonia régészeti kézikönyve* [Archaeological Manual of Pannonia]. Budapest 1990, 99, 111; KOVÁCS 2000, 42–43, 55, 89

³ KOVÁCS 2001; P. KOVÁCS: Annamatia (Baracs). In: Zs. Visy

(ed.): *The Roman Army in Pannonia*. Pécs 2003, 119–121; P. KOVÁCS: Annamatia and Matrica. Excavations in two auxiliary forts along the Eastern Pannonian limes (1993–2003). In: *Römische Städte und Festungen entlang der Donau*. Belgrade 2005, 97–106.

⁴ My own scientific work was sponsored by the Hungarian Scientific Research Fund (OTKA, No. F 37901).

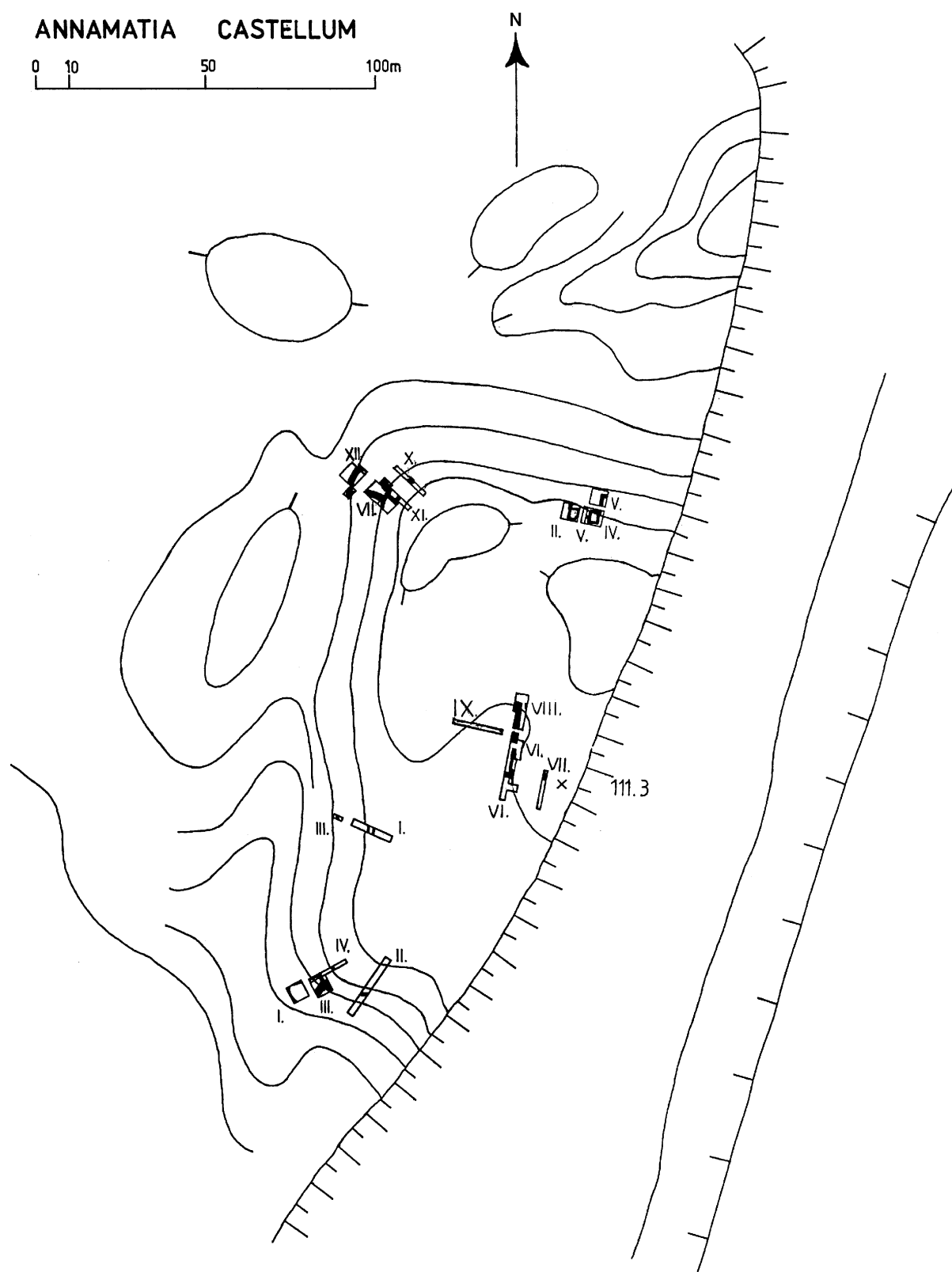


Fig. 1. The auxiliary fort of Annamatia (1999–2004)

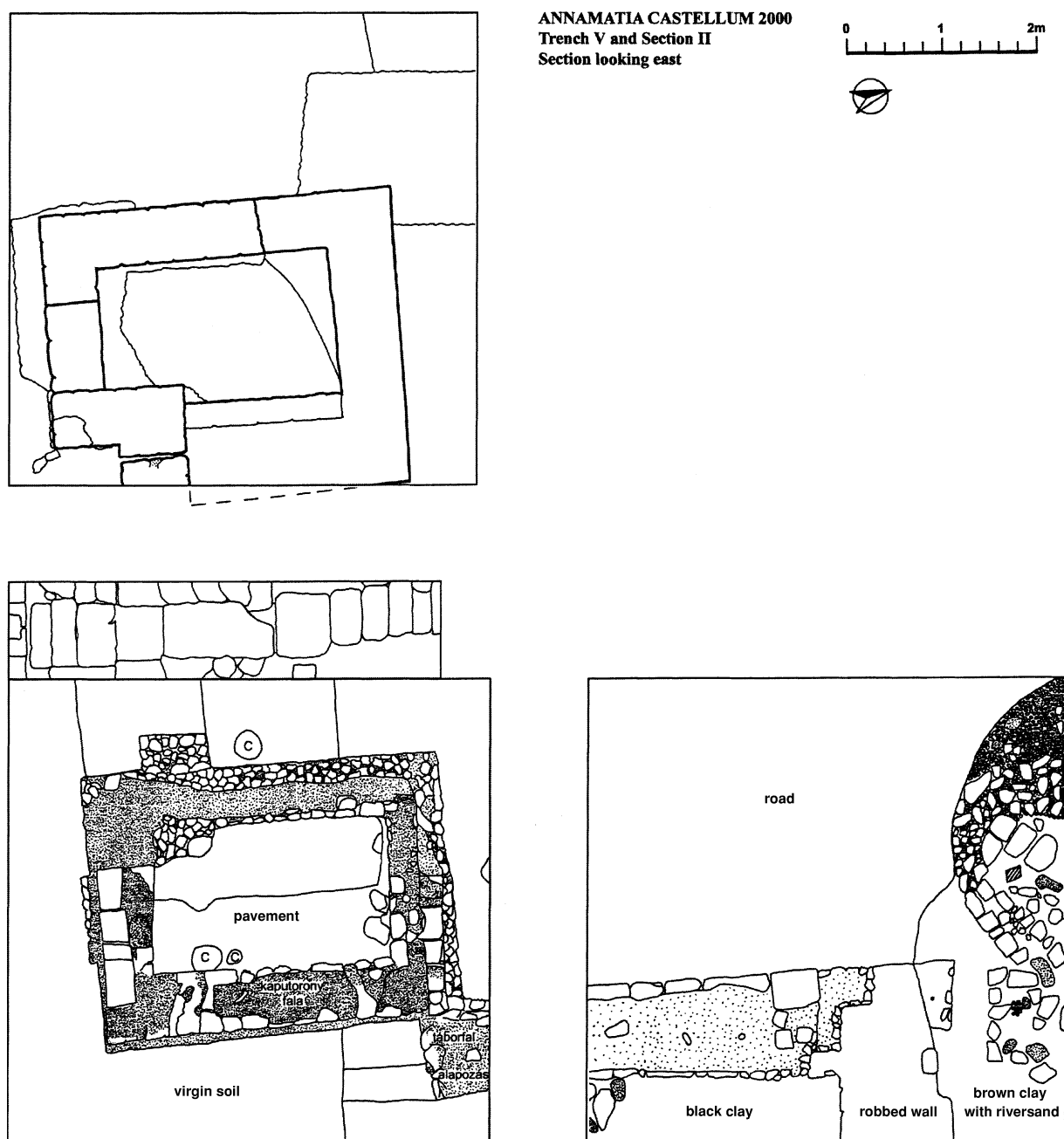


Fig. 2. The northern gate of Annamatia

layer was observed. Horizontally laid bricks were found in this layer. A small section of another yellow clayey level was unearthed as well. These levels most probably belonged to the late Roman period of the *via principalis*. The upper layers were cut by modern pits and thus the latest Roman layers were probably destroyed. A 40 cm wide stone drain was found below the road. Its stones, mixed with brick fragments, were set in clay. Fragments of a North Italian thin-walled cup fragments were found among the stones. The mortared bottom of the drain lay 108.12 m a.s.l. The drain was covered by smaller and larger limestone slabs (the largest is 120 × 60 cm, 40 × 60 cm on the average). In its fill contained a few Roman and prehistoric pottery sherds, as well as egg fragments. A

stone channel measuring 45×60 cm was uncovered in the southern end of the trench; this channel led the rain water into the drain. It consisted of two U shaped carved stones. The road above it was covered by smaller stones.

Section II was opened 1 m east of the trench in order to investigate the western tower of the gateway. Here we could uncover the whole tower. Its external dimensions were 2.5×3.7 m, its internal dimensions were 1.3×2.5 m. The southern part of the tower remained more intact than the northern one where the stones of the wall had been removed to the foundations. The walls are 60 cm wide, and they survived to a height of 70–80 cm. Its 90 cm wide entrance was found on the southern side (109.62 m a.s.l.). It had projecting footing, the foundation was 70 cm high. The base of its foundation lay 108.71 m a.s.l. It had limy and yellow clayey floor-levels. There was no projecting part of the tower. The stones of the surviving wall and highest row of the foundation were set in mortar (6–7 rows remained), the stones of the foundation were set in clay. The characteristic feature of its ground-plan is that the eastern wall of the tower projects 40 cm eastwards 1.4 m north of the southeastern corner and served as a buttress for the gate. This projection was only 20 cm wide on the interior face of the wall. West of the tower we uncovered a section of the inner earthen rampart of the fort wall. It consisted of brown yellow clayey layers and grey earth. Its 3.8 m wide section was observed. In the rampart the (grey) mud walls of an earth-timber period structure were also uncovered. The adobe-walled building was only partly levelled when the stone fort was built and its layers were built in into the inner earth-work (*Wehrgang*). The remnants of the levelled upper wall can also be seen in the section. Two 0.5 m wide, N-W direction walls can be seen at distance of 2.5 m from each other. Their surviving height is 50–70 cm. The walls consisted of 25 cm wide 15–20 high grey mud bricks (2 rows beside each other). Under the rampart, 1.8 m below the present ground level, a late Bronze Age layer was found (Urnfield-culture).⁵ We could not observe the fort wall in this section. Only its 1 m wide demolition layer was found in the northwestern corner, suggesting that the fort wall was totally robbed here. The N-S direction wall was built to the NW corner of the gate tower. The base of its foundation lay 108.73 m a.s.l. The mixed layer containing stones and mortar in the northeastern part of the section belongs to this period. The floor-levels of this period were not observed because of modern intrusions. A 50–60 cm thick fill containing gravel, sand and yellow clay was found in the interior of the rectangular tower. This fill can be observed in the southern section south of the tower as well, implying that the posterior part of the tower was not used in the late Roman period. A sestertius of Traian from the period 104–111 A. D. was found in the 1st floor-level of the western tower (cf. No. 10).

Section IV: In this section the eastern gate-tower was also totally revealed. The walls of the tower remained also in very good condition: external dimensions were 2.9×3.7 m, internal dimensions were 1.5×2.5 m. The walls were 60–65 cm wide, the ascending walls were 70–100 cm high in average. The projecting foundation was 1.6 m high, its bottom was found 107.79 m a.s.l. The stones of the foundation were put into mortar. Only one pebbled floor-level was observed. The 60 cm wide entrance of the gate can be found also in the southern part of the tower. In the line of the projection of the western gate tower only a 70×50 cm projection was revealed. In the inner side of the wall in the line of the projection a similar addition can be observed as in the case of the western gate tower in section II. There were no piers which means the gate was single portalled. In this section the N-S direction fort wall was also remained with 50 cm high ascending wall. The foundation of wall was very similar to the elsewhere observed wall, the last 4 rows of stones were put into clay, the foundation is 75 cm high. The 1 m wide fort wall was built to the NE corner of the tower. Despite the fact that the bottom of its foundation 40 cm higher than of the gate (108.16 m a.s.l.) the walls were surely contemporaneously built. The turf rampart was also remained and it could be observed in the eastern section. Its structure is very similar to the layers observed in section II and the two adobed walls were also revealed. There is a 1.5 m distance between them. Beside the projection of the tower a posthole (diameter: 30 cm) was revealed which was filled with road metalling after the withdrawal of the post. In the fill carved stones were found as well.

Section V: In this section the L-shaped section of the 1-m-wide fort wall was revealed with the *via principalis*. The surface of the gravelled road was 109.13 m a.s.l. and it was renewed twice. Below the the pebbled layer greater stones (30×20 cm in average) were also observed. The N-S direction ascending wall was 50 cm

⁵ Cf. J. B. HORVÁTH–T. KESZI: Az Intercisa Múzeum őskori állandó kiállításának katalógusa – The Catalogue of the Permanent

Praehistoric Exhibition of Intercisa Museum. Dunaújváros 2004, 20, 54, Nos. 100–104.

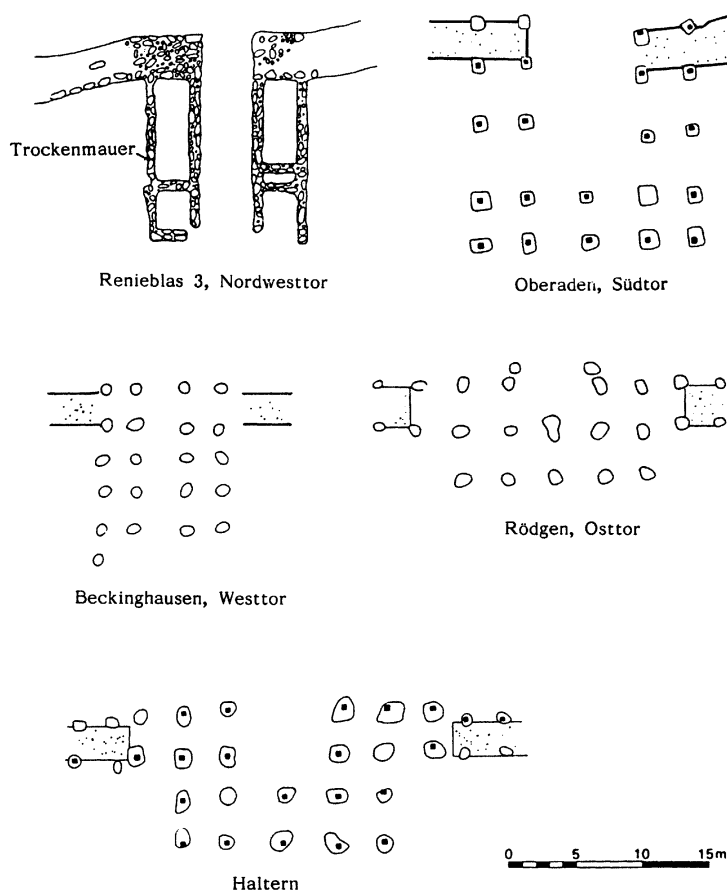


Fig. 3. Roman timber gateway types (after JOHNSON 1987)

high but after a 2.6 m long section the wall turned at right angles to the E. This part of the fort wall was totally robbed. A very important observation is that the Roman turf rampart could be observed in the eastern section as well. This can only mean that the inner earth-work, the gate towers and the fort wall were built at the same time.

SELECTED FINDS

Samian ware (identified by D. Gabler and F. Horváth)

1. Fragment of a Drag. 33 cup. Central-Gaulish, Hadrian-Antonine. Section II, inner earthen rampart of the fort wall (Fig. 5.5).
2. Body fragment of a Drag. 37 bowl. Central-Gaulish, late Hadrian-Antonine. Trench V, gravelled road-level (Fig. 5.3).
3. Fragment of a Drag. 37. South-Gaulish, circle of Natalis. Traianic-Hadrian. Section II, robbing layer.
4. Fragment of a Drag. 18/31R plate. Rheinzabern, Antonine. Trench V, humus.
5. Rim fragment of a Drag. 37 bowl. Central-Gaulish, Hadrian-Antonine. Section V, road-level.
6. Fragment of a Consp. 20/4. Fabric D. North-Italian, Claudius-Vespasianic. Trench V, humus.
7. Body fragment of a Drag. 37 bowl. Rheinzabern, Ianuarus II. *Ibid.*, upper mixed layer.
8. Fragment of a Drag. 33 cup. Rheinzabern. 2nd half of the 2nd c.-1st 3rd of the 3rd c. *Ibid.*
9. Body fragment of a Drag. 37 bowl. Central-Gaulish, Limanus? Antonine. Section IV, above the floor-level.
10. Body fragment of a Drag. 37 bowl. Lezoux, Traianic-Hadrian. *Ibid.*
11. Body fragment of a Drag. 37 bowl. Late Rheinzabern. 3rd c. section IV, upper mixed layer.
12. Rim and body fragment of a Drag. 37 bowl. Rheinzabern, Commodus-Sept. Severus. Section II, yellow mixed layer, -1.4 m.
13. Fragment of a Drag. 37 bowl. Central-Gaulish, Antonine. *Ibid.*

Imported ware

1. Fragments of a North-Italian thin-walled cup with barbotine and rouletted decoration (Fabric E). Flavian. Trench V, between the stones of the channel below the road⁶ (Fig. 5.6).

Local ware

Pannonian grey slip ware

1. Grey coated body fragment with stamped decoration. Section IV, mixed yellow clay layer (Fig. 4.6).
2. Grey coated body fragment with stamped decoration. Section IV, road-level (Fig. 5.2).
3. Orange coated base fragment. *Ibid.* (Fig. 4.8).
4. Grey coated body fragment with stamped decoration (leaf motive). *Ibid.* (Fig. 4.7).

Colour coated and coarse pottery

1. Fragments of a grey coated Pátka-type bowl (Leistenschale, Gose 303) with oblique rouletting. Diam: 9, 20.5 cm, h: 10.1 cm. Section V, above the road-level⁷ (Fig. 4.10).
2. Fragments of a brownish coarse pot with slightly everted rim of triangular section. The neck is decorated with three grooved lines (*Kerbschnitt*).⁸ Diam: 6.6, 11.7 cm, h: 16 cm. Section IV, Roman humus below the turf rampart and from the road-level (Fig. 4.1).
3. Base and body fragments of a brownish jug. Diam: 8.9, h: 9.7 cm. *Ibid.* (Fig. 5.4).
4. Rim fragments of a dish in grey fabric with horizontally everted rim. *Ibid.*⁹ (Fig. 5.3).
5. Rim fragment of a dish in yellow fabric with horizontally everted rim. *Ibid.*¹⁰ (Fig. 5.1).
6. Ribbed handle fragment of a jug in yellow fabric. *Ibid.*¹¹ (Fig. 5.5).
7. Body and base fragments of a jug in brick-red fabric. Section IV, turf rampart.
8. Rim fragment of a pot in yellow fabric with slightly everted rim. The internal wall and the rim are orange-red coated. *Ibid.*
9. Rim fragments of a grey coarse pot with slightly everted triangular rim. The neck is decorated with three grooved lines (*Kerbschnitt*). *Ibid.*¹² (Fig. 5.6–8).

Metal finds

1. Fragment of a gilded bronze statue (fold fragment, part of the *paludamentum*). 2,8 × 5,7 cm. Section V, over the road-level¹³ (Fig. 4.2).
2. Bronze stud. D: 1,3 cm, h: 1,5 cm. Trench V, upper mixed layer¹⁴ (Fig. 4.3).
3. Scale fragment of an iron scale armour (*lorica squamata*). 2,2 × 3,1 cm. Section IV, yellow mixed layer, –1,5 m (Fig. 4.4).
4. Bronze, double-plated strap-terminal with a rivet. L: 3.8 cm. *Ibid.*¹⁵ (Fig. 4.9).
5. Mushroom shaped bronze mount. Diam: 2.5, H: 1.8 m. Section II, inside the tower, sandy fill.¹⁶
6. Bronze rivet (belt mount). L: 1.3, diam: 1.5 cm. Section V, above the road-level¹⁷ (Fig. 4.3).

⁶ V. GASSNER: *Feinware aus Carnuntum*. CarnuntumJb 1990, 256–261.

⁷ GABLER 1977, 163–164; D. GABLER–F. HORVÁTH: A szakályi terra sigillaták és helyük a benntűlt telep kerámia spektrumában (Die Terra Sigillaten von Szakály und ihre Stellung im Keramikspektrum der einheimischen Siedlung). WMMÉ 19 (1996) 157.

⁸ Form: GABLER 1977, 167, No. 41, Abb. 11/3; BÓNIS 1942, 61–63, T. I/7.

⁹ Form: GABLER 1989, 297, No. 346, Fig. 107.

¹⁰ Form: GABLER 1989, 297–298, Nos. 343–359, Fig. 107.

¹¹ GABLER 1977, 166.

¹² Form: GABLER 1977, 167, No. 41, Abb. 11/3; BÓNIS 1942, 61–63, T. I/7.

¹³ Earlier some fragments of bronze statues of emperors were found in the area of the fort: L. HÖKE: ArchÉrt 2 1870[1869], 312; VISY 1983, 82, No. 13; Romains de Hongrie. Lyon 2001, 115, No. 219.

¹⁴ Cf. OLDENSTEIN 1976, 170–171, 257, No. 504.

¹⁵ Cf. OLDENSTEIN 1976, 142–147, Nos. 307–308, 317.

¹⁶ KOVÁCS 2001, 73, No. 13. Cf. OLDENSTEIN 1976, 168, 256, No. 483.

¹⁷ Cf. OLDENSTEIN 1976, 170–171, No. 504.

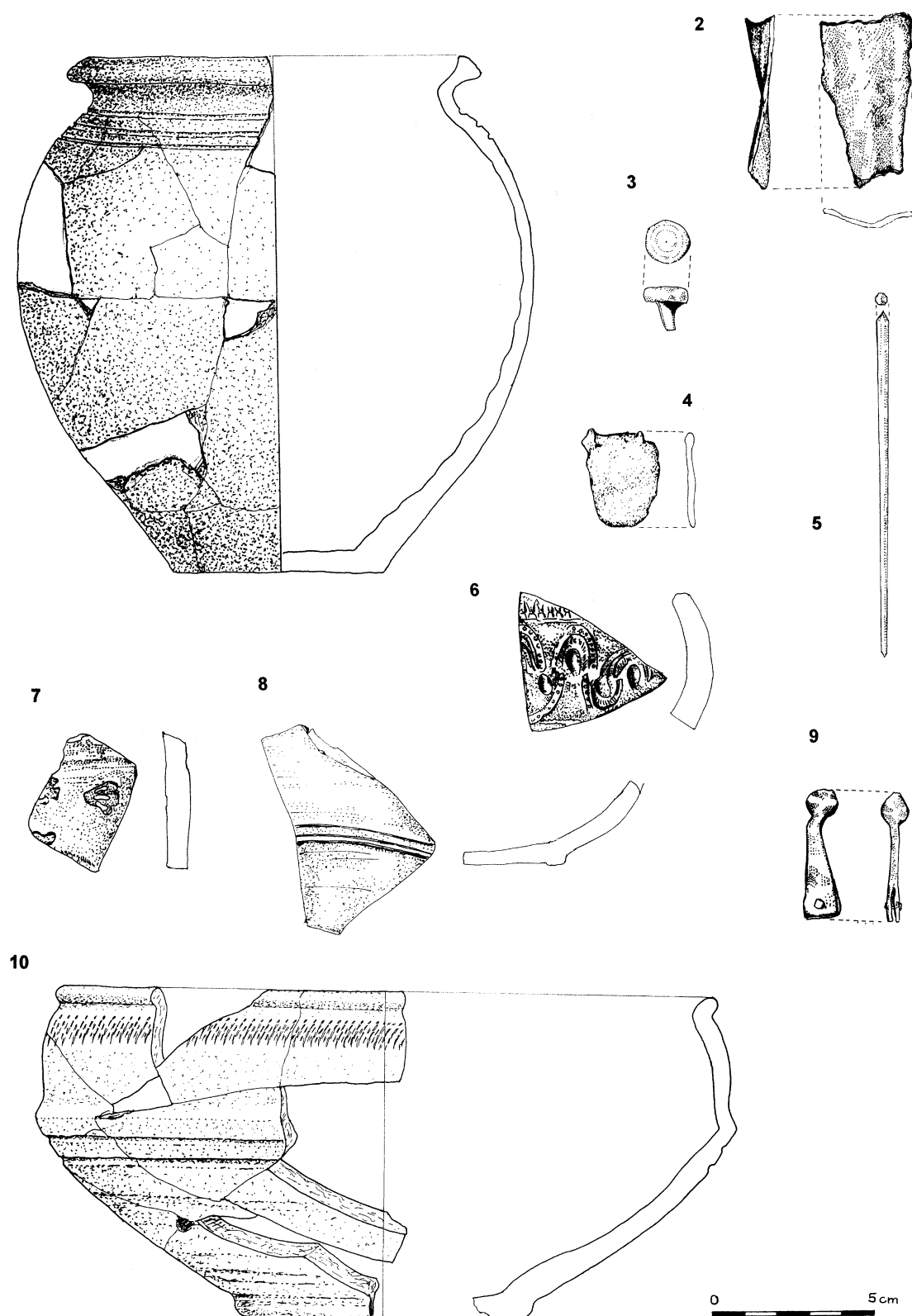


Fig. 4. Annamati, selected finds

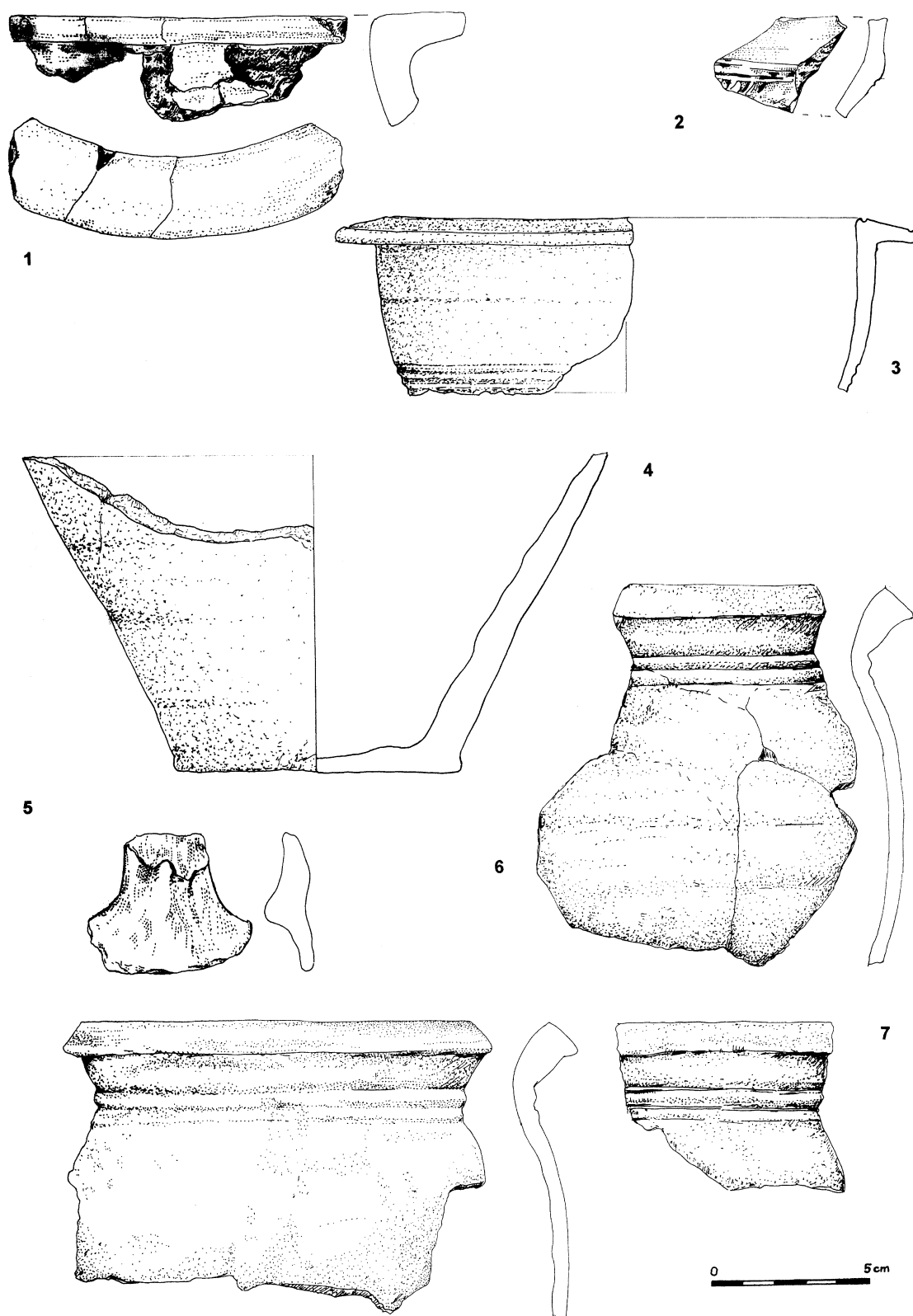


Fig. 5. Annamatiya, selected finds

Bone objects

1. Hair-pin with undecorated head, the pin is missing. L: 10.6 cm. Section IV, sandy fill of the floor-level of the tower, – 1.4 m.¹⁸
(Fig. 4.5)

Coins (identified by E. Farkas, L. Thúry and M. Torbágyi)

1. Ant. divus Claudius. 270. Section II, robbing of the tower wall.
2. Ant. Gallienus. 262–267. RIC V/1, 553. *Ibid.*
3. As. 2nd century. *Ibid.*
4. Aes 3. Valentinianus. 364–375. RIC IX, 17, 24/12. Section II, black destruction layer.
5. HS. Traianus. 104–111. BMC III, 800. Section II, inside the tower, sandy fill.
6. Aes 3. Valens. 367–375. RIC IX, 15b/10. *Ibid.*
7. Aes. 4th century. Section II, rubble layer
8. Aes. 4th century. *Ibid.*
9. Ant. Probus. 276–282. RIC V/2, 158 F1a. Section II, rubble layer.
10. As. Traianus. 98–102. Section II, black demolition layer.
11. Aes 3. Valentinianus. 364–375. *Ibid.*
12. Aes 3. Valentinianus. 367–375. RIC IX 15a/10. Section IV, upper mixed layer.
13. Aes 3. Gratianus. 367–375. RIC IX 15c/11. Section V, E of the fort wall, grey layer
14. Denarius. Alexander Severus. 226. BMC VI 330. Section V, yellow clay floor-level, – 0.9 m
15. Ant. II Claudius. 268–270. Section V, upper mixed layer
16. Ant. Gallienus. 260–268. RIC V/1 585. Section V, over the via principalis
17. Aes 3. Valentinianus. 364–375. RIC IX 4a. *Ibid.*
18. Aes 3. Constantinus. 313–314. RIC VII 8. *Ibid.*
19. Aes 3. Valentinianus? 364–375. *Ibid.*
20. Aes 3. Crispus. 321–324. RIC VII 181. *Ibid.*
21. Ant. Diocletianus. 289–290. RIC V/2 264. *Ibid.*
22. Ant. Gallienus. 260–268. RIC V/1 330. *Ibid.*
23. Subaeratus. Antoninus Pius. 138–161. *Ibid.*

Stamped tiles

1. Teg. COH VII BR. Trench V, renewed road-level.
2. Teg. TEREN. W: 3.2 cm. Section II, robbing layer.
3. Teg.]DV[. Th: 2 cm. Section II, robbing layer.
4. Teg. COH VII BRE MAX Th: 2.5–3.3 cm. Section IV, below the threshold-stone of the tower.¹⁹
5. Teg.] DV[Th: 2 cm. Section II, stray find.
6. Teg.] ALEX Th: 2 cm. Section V, above the road-level.
7. Teg.]HO [Section IV, W of the tower, robbing layer.

CONCLUSION

During the excavations both towers and a section of the road were uncovered. The deep inset internal towers: external dimensions were 2.5–8 × 3.7 m, internal dimensions were 1.3 × 2.5 m. The ascending walls are 60 cm wide, and they survived to a height of 70–80 cm. In both cases the 90 cm wide entrance was found on the southern side. The gate was single portalled and it had 70 cm wide projections in the line of the rear walls of the towers. The road was 3.4 m wide and 60 cm thick, it was only a pebbled road (flagstones were not found). A 40

¹⁸ Cf. M. T. BÍRÓ: The Bone Objects of the Roman Collection. *Catalogi Musei Nationalis Hungarici. Series arch. 2.* Budapest 1994, 30–35, Nos. 134–151, esp. 138, 148–149.

¹⁹ P. KOVÁCS: A new imperial epithet of the cohorts VII Breu-
corum. *ActaArchHung* 55 (2005) 245–249.

cm wide S-N stone drain covered by limestone slabs was found below the road. A vertical stone channel measuring 45 × 60 cm was also revealed which led the rain water from the road level into the drain. It consists of two U shaped carved limestones. The most important observation is the ground-plan of the gate. The fort walls were added to NW and NE corners of the towers. They were contemporaneously built but the fort wall had 40 cm higher foundation. The 1-m-wide fort walls had L-shaped direction (after a 5 m long N-S section turned at right angles E-W) and formed a deep forecourts together with the towers. The turf ramparts were observed beyond these sections as well. Its parallels can be found among the earlier (mostly Augustan) timber gate-types from Germania (*Fig. 3*).²⁰ This type of gateway with deep but narrow recessed doors and L-shaped towers are known from the Republican period (cf. the case of Renieblas fort No. 3 dated to 153 B. C.) to the reign of Augustus: Manning-Scott Type V: e. g. Oberaden (south gate: Augustan), Beckinghausen (west gate), Haltern (east gate: before 9 A. D.), Batavodurum (SE gate: Augustan). The latest is known example of this type is the south gate of Hüfingen which is most probably Neronian.²¹ There is a not so deep variant of the type which seems to be later one: Manning-Scott Type IV, V/3: Rödgen (east gate: 10–9 B. C.), Hod Hill (east gate: Claudian), Great Caster-ton (south gate: Claudian), Valkenburg I (south gate: Claudian), Vindonissa (north and south gates of the stone period: Claudian (cf. *CIL* XIII 11515, 5201–5327)), Ristissen (west gate: late Claudian) Vetera I (south gate: Neronian), Usk (east gate: Neronian), Longthorpe (north and east gates: 48–60 A. D.), Lincoln (east gate: Phase 1–2: 60–70 A. D.), Pen Llŷstyn (NE gate: Flavian), Inchtuthil (east, south and west gates: Agricola). These gate were as usually double-portal but single-portal can also be found among them: Renieblas No. 3, Beckinghausen, Valkenburg I, Vindonissa. This solution was earlier unknown among the Roman stone gate types, only the fort No. 3 at Renieblas had similar (but dry-walled) towers.²² The Porta di Nola and the Porta di Ercolano of Pompeii dated to the period after Sulla's conquest had similar ground-plans.²³ The northern gate of Annamatia belongs surely to the earlier, deeper type. The gate was surely renewed under Severus Alexander and Maximinus Thrax on the basis of a stamped tile of the *cohors VII Br(eucorum) Alex(andriana)* and *Max(iminiana)* (cf. above Nos. 4, 6). U-shaped towers were not found but late Roman stamped tiles show its use under Valentinian (cf. above Nos. 2, 3, 5). On the basis of an aerial photograph it can be supposed that only the *porta decumana* was blocked by an U-shaped tower similarly to the fort of Intercisa.

The only remaining question is when and why this unusual gate type was built in Annamatia. The strategic purpose of this type with the recessed doors is very simple: in the deep forecourt the enemy can easily be attacked from three sides.²⁴ It is absolutely unlikely that the builders of the stone period fort used an unknown gateway type in the 2nd century. The explanation can be found elsewhere. It is a very likely possibility that the gateway of the earth-timber period was replaced in the second century by stone structure of a very similar plan as it happened at Heilbronn-Böckingen or in the case of Vindonissa where in place of the timber gateway a stone one with same ground-plan at the same place was built in the Claudian period (cf. *CIL* XIII 11515, 5201–5327).²⁵ The adobe-walled structures in the turf rampart in sections II and IV prove that the earlier earth-timber period gateway was built at the same place. The withdrawal of the post in section IV can refer to this as well. If this hypothesis is true at least two things follows:

1. the form of the gateway also confirms my earlier conclusion that on the basis of the North-Italian terra sigillata finds (cf. above No. 6) this period fort was probably built under the reign of Claudius (at least under Vespasian).²⁶ As we could see the gateway type belongs to the earlier variant which cannot be dated later than period of the Iulio-Claudian-dynasty.

²⁰ SCHÖNBERGER 1961, 50–54, Abb. 11; BECHERT 1971, 214–217; MANNING–SCOTT 1979, 27–29, 53–58, Nos. 74–89; W. H. MANNING–I. R. SCOTT: Timber gateways with a note on iron fittings. In: P. Bidwell–R. Miket–B. Ford: *Portae cum turribus*. Studies of Roman fort gates. BAR 206. Oxford 1988, 5, Type V/1–2; HOBLEY 1988, 56, Fig. 2.26; JOHNSON 1987, 98, Abb. 53.

²¹ MANNING–SCOTT 1979, 56, No. 85.

²² BECHERT 1971.

²³ R. SCHULTZE: Die römischen Stadttore. BJ 118 (1909) 280–

352, 286–289; F. KRISCHEN: Die Stadtmauer von Pompeji und griechische Festungsbaukunst in Unteritalien und Sizilien. Berlin 1941.

²⁴ SCHÖNBERGER 1961, 50; BECHERT 1971, 216.

²⁵ R. LAUR–BELART: Vindonissa. Lager und Vicus. RGF 10 (1935) 24–26; H. SCHÖNBERGER: Neuere Grabungen am obergermanischen und raetischen Limes. Limesforschungen 2 (1962); BECHERT 1971, 214–217; LANDER 1984, 22.

²⁶ KOVÁCS 2001, 76–77.

2. On the basis of our excavations the earth-timber period fort had at least two phases (with two ditches). During this time the form of the gateway was not changed. The datable finds from the layers of the stone-period fort (turf-rampart, road-level) suggest that the fort was built into stone only in the middle of the 2nd century, probably under Antoninus Pius' reign.²⁷ The new finds from the area of the northern gate (e. g. the Pannonian grey slip ware frags. from the road-level: see above) do not change this date.

Finally, it has to be added that this gate tower type was used again only during the building of the *castella* of the Saxon Shore in Britannia in the end of the 3rd century. Similar gates with inturned entrance were found in the case of the forts at Portchester and Pevensey as well.²⁸ However, in the latter case beside the "normal", quadrangular gate towers 2 U-shaped flanking ones were added to the fort wall as interval towers. On the other hand, the ground-plan of the "Landgate" and the "Watergate" of Portchester is the closest parallel of the gate of Annamatia. The function of this type was the same as in the early Imperial period. On the basis of building of these forts the gate of Annamatia cannot be dated because the fort of Baracs was surely earlier built into stone and the gate towers were contemporaneously built.

REFERENCES

- BECHERT 1971 = T. BECHERT: Römische Lagertore und ihre Bauinschriften. Ein Beitrag zur Entwicklung und Datierung kaiserzeitlicher Lagertorgrundrisse von Claudius bis Severus Alexander. BJ 171 (1971) 201–287.
- BÓNIS 1942 = É. BÓNIS: A császárkori edényművesség termékei Pannoniában – Die Kaiserzeitliche Keramik von Pannonien I. DissPann II:20. Budapest 1942.
- GABLER 1977 = D. GABLER: A dunai limes I–II. századi történetének néhány kérdése (Some remarks on the history of the Danubian limes of the first and second century). ArchÉrt 104 (1977) 145–175.
- GABLER 1978 = D. GABLER: Die Sigillaten von Pfaffenhofen in Pannonien. ActaArchHung 30 (1978) 77–147.
- GABLER 1989 = D. GABLER: The Roman Fort at Ács-Vaspuszta on the Danubian Limes. BAR IntSer 531. Oxford 1989.
- HOBLEY 1988 = B. HOBLEY: The evidence for the form and appearance of turf and timber defences of Roman forts in the late first century, based on experiments at the Lunt Roman fort. In: P. Bidwell–R. Miket–B. Ford: Portae cum turribus. Studies of Roman fort gates. BAR 206. Oxford 1988, 25–61.
- JOHNSON 1987 = A. JOHNSON: Römische Kastelle des 1. und 2. Jahrhunderts n. Chr. in Britannien und in den germanischen Provinzen des Römerreiches. Mainz 1987.
- KOVÁCS 2000 = P. KOVÁCS: Matrica – Excavations in the Roman fort at Százhalombatta (1993–1997). Studia Classica – Series historica 3. Budapest 2000.
- KOVÁCS 2001 = P. KOVÁCS: Annamatia (Baracs) (A Roman auxiliary fort in Pannonia). ActaAntHung 41 (2001) 55–80.
- LANDER 1984 = J. LANDER: Roman Stone Fortifications. Variation and change from the first century A. D. to the fourth. BAR IntSer 206. Oxford 1984.
- LÖRINCZ 2001 = B. LÖRINCZ: Die Hilfstruppen der römischen Provinz Pannonien in der Prinzipatszeit. Wien 2001.
- MANNING–SCOTT 1979 = W. H. MANNING–I. R. SCOTT: Roman timber military gateways in Britain and on the German frontier. Britannia 10 (1979) 19–61.
- MAXFIELD 1989 = V. MAXFIELD: The Saxon Shore. A handbook. Exeter 1989.
- OLDENSTEIN 1976 = J. OLDENSTEIN: Zur Ausrüstung römischer Auxiliareinheiten. Studien zu Beschlügen und Zierat an der Ausrüstung des römischen Auxiliareinheiten des obergermanisch-raetischen Limesgebietes aus dem zweiten und dritten Jahrhundert n. Chr. BRGK 57 (1976) 49–284.
- PETRIKOVITS 1971 = H. VON PETRIKOVITS: Fortifications in the Northwestern Roman Empire from the third to the fifth centuries. JRS 61 (1971) 178–218.
- SCHÖNBERGER 1961 = H. SCHÖNBERGER: Ein augusteisches Lager in Rödgen bei Nauheim. SJ 19 (1961) 37–88.
- VISY 1983 = Zs. VISY: Basen und Fragmente von Kaiserstatuen in Intercisa. ActaArchHung 35 (1983) 73–85.

²⁷ KOVÁCS 2001, 77–78.

²⁸ PETRIKOVITS 1971, 201, 210/11, 213/10; MAXFIELD 1989, 37–39, 157–162.