

THE PRE-FLAVIAN GARRISONS OF VALKENBURG Z.H.

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THE PRE-FLAVIAN GARRISONS
OF VALKENBURG Z.H.

fabriculae and bipartite barracks

W. GLASBERGEN

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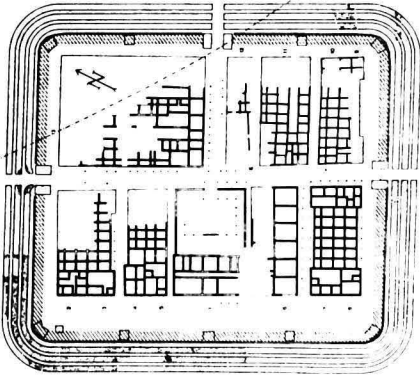
AANGEBODEN IN DE VERGADERING
VAN 13 NOVEMBER 1972

This publication is partly the result of the activities of the project Valkenburg Z.H. (at present consisting of W. Glasbergen, Mrs. W. Groenman-van Waateringe, M. D. de Weerd, Miss S. M. E. van Lith and B. L. van Beek), which was begun in 1967 in department 3 (Provincial Roman archaeology of the Netherlands) of the Instituut voor Prae- en Protohistorie (I.P.P.), University of Amsterdam. It is the intention that castellum 1 will be fully worked out by the end of 1975.

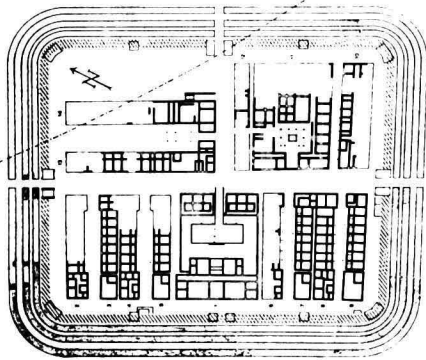
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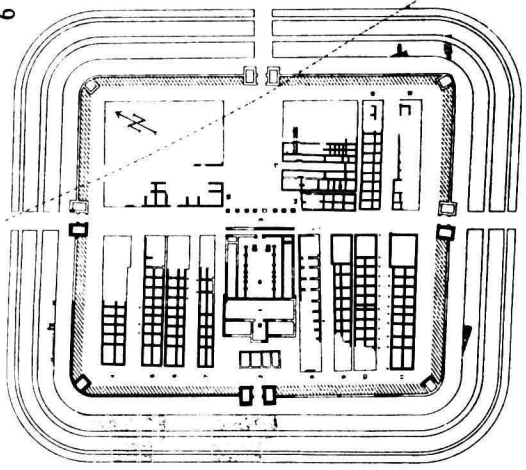
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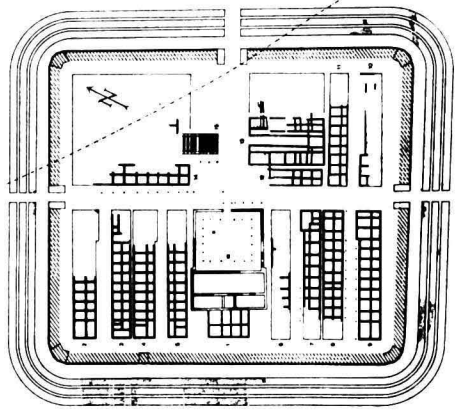
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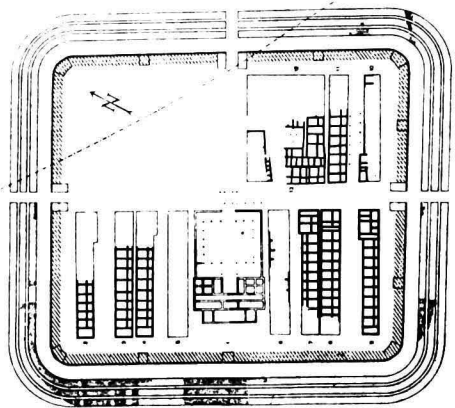


Fig. 1. Valkenburg Z.H., castella 1, 2/3, 4, 5 and 6, groundplans.

RÉSUMÉ

(fig. 1)

The investigations of the village mound of Valkenburg Z.H. begun in 1941 have brought to light five castellum plans, even though the left praetentura still exhibits lacunae: 1, 2/3, 4, 5 and 6, the area enclosed by the intervallum increasing from 0.99 to 1.17 hectares. The ground plan of 1 was published in 1966, and those of 2/3, 4, 5 and 6 in 1972; that of the adaptation phase 1a is given here for the first time.

The lay-out of the barracks—especially in the differing numbers of contubernia—suggests at least two changes of garrison. The type and number of barracks, especially the number of officers' rooms per castellum, the inscriptions and significant finds suggest that the following garrisons may now be allocated to castella 1, 2/3, 4, 5 and 6:

In *castellum 1* a *vexillatio* consisting of four centuries and a maximum of two turmae (in part?) subtracted from a cohors III Gallorum equitata. The castellum was abandoned shortly afterwards, the ground level was raised, and the barracks were modified to provide temporary accommodation for eight turmae (*half an ala quingenaria*) (*adaptation phase 1a*). This garrison was soon afterwards quartered in the *castellum 2/3*, which was especially designed for cavalry, with an extra wide intervallum at the rear end. A recently discovered tile stamp identifies the cohors IIII Tracum as the garrison of *castellum 4*, a *cohors quingenaria equitata*, which presumably also formed the garrison of *castella 5 and 6* (see J. E. Bogaers, 1974, pp. 452–454, 461–462).

Abbreviations.

left/right retentura = area left/right of the principia enclosed by the intervallum and via principalis

left/right praetentura = left or right half of the praetentura

INTRODUCTION

(fig. 2)

For the sake of brevity we refer to the recent publication (1972)¹ of the results of the 12th campaign (1962)² at Valkenburg Z.H. which have been inserted into the overall plans of castella 1, 2/3, 4, 5 and 6.³ Although it was there assumed—wrongly, as it appears—that an entire cohort *quingenaria equitata* was stationed in 1, speculations regarding the size and composition (infantry to cavalry numbers) of garrison 2/3 were deliberately avoided, since as the complete plan, as well as the nature of the adaptation phase 1a⁴ were not established with certainty, and inscriptions and significant finds from 1a and 2/3 were not yet known.

It has been evident since 1962 that, apart from the central section of the *retentura* (*principia*) of the successive castella, the following were *not* intended as living quarters for the soldiers:

- in 1 the entire right *praetentura*,
- in 2/3 part of the right *retentura* and part of the right *praetentura*,
- in 4–6 a section of the right *praetentura*, while
- in 2/3–6 the function of the fragmentary buildings in the left *praetentura* must, for the time being, remain problematical.

The general chronology of the castella of Valkenburg is as follows:

- 1 40 AD⁵
- 1a 42
- 2/3 47–69
- 4 after 70—about 100
- 5 about 100—between 170 and 174
- 6 about 178—about 240.

¹ W. Glasbergen, 1967 (published in 1972, manuscript closed in 1967!).

² Previous campaigns: 1941-42-43-46-47-48-49-50-51-52-53.

³ Unpublished until then, except for castellum 1 in W. Glasbergen, 1966, p. 103.

⁴ A draft for a schematic abstract plan was prepared in 1953 by R. Woudstra, then of the Biologisch-Archaeologisch Instituut (B.A.I.), University of Groningen, and since 1.09.54 in employment of the Rijksdienst voor het Oudheidkundig Bodemonderzoek (R.O.B.), Amersfoort. W. Glasbergen, 1967, p. 133.

⁵ J. K. Haalebos, 1973, Chapter XIV, pp. 302–303; see also S. J. De Laet, 1969, pp. 31–32. W. A. van Es believes in 47 (1972, pp. 80–81).

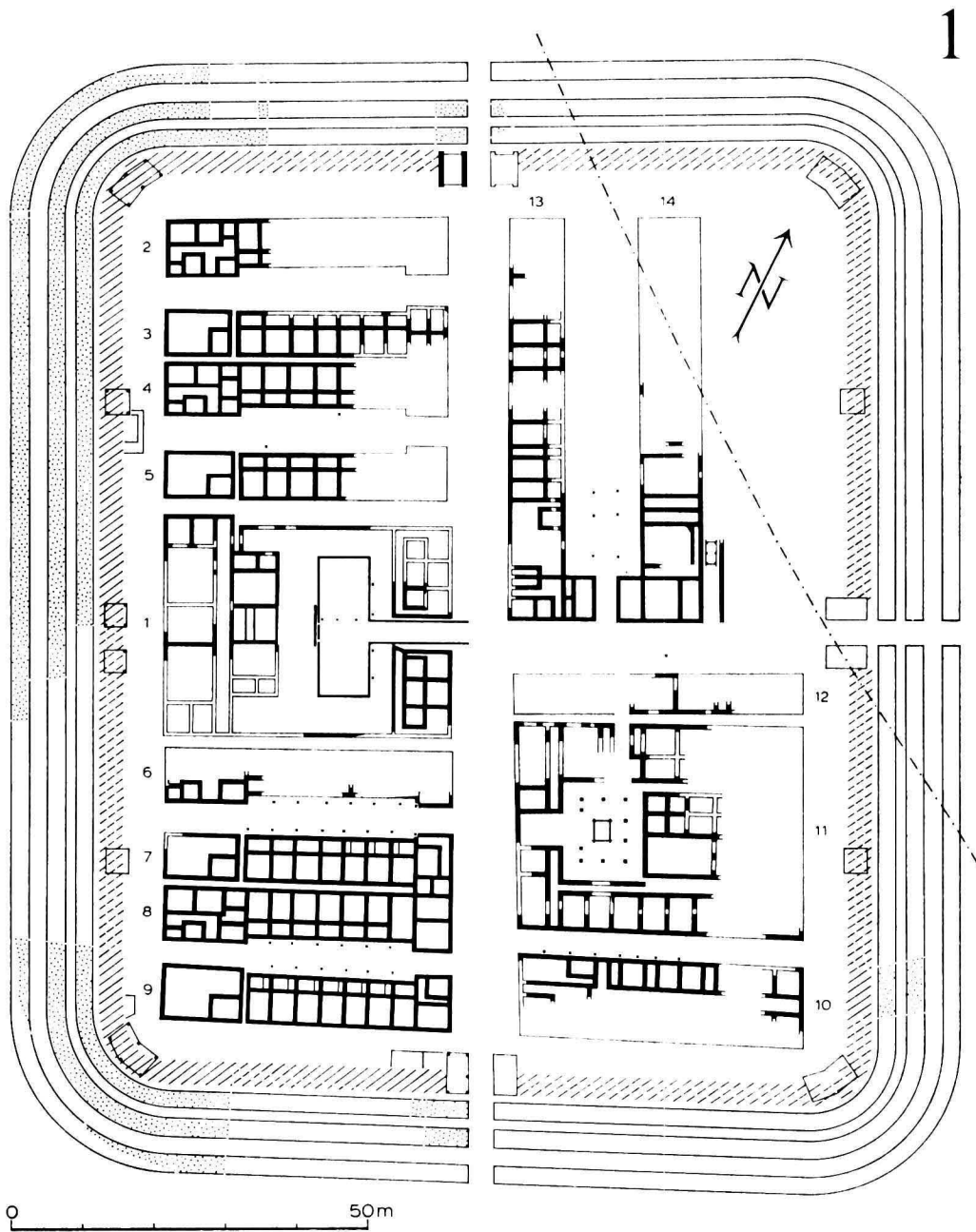


Fig. 2. Valkenburg Z.H. 1, groundplan.

CASTELLUM 1

(fig. 3, pl. 1-2, 6-7)

Traces of military activities in Middle and Western Europe during the principates of Caligula and Claudius have, up to now, been distinguished on the Upper Danube, ⁶ the Middle Rhine, ⁷ the Rhine mouth area and Southern England. In only four castella has enough of the *retentura* and *praetentura* been excavated to allow speculations as to the size of the garrison: Valkenburg Z.H. 1, Valkenburg Z.H. 2/3, Hod Hill ⁸ and Oberstimm. ⁹

In Valkenburg Z.H. 1, the eight barracks in the *retentura* and the two ¹⁰ in the left *praetentura* are generally – and, in our opinion correctly – considered as having accommodated infantry and cavalry respectively. At Hod Hill, which shares the feature of a broad front with Valkenburg (typical for forts of Claudian date?) ¹¹ the lay-out is essentially different: thirteen buildings were interpreted as barracks. On the basis of the finds and the occurrence of two commandants' houses, Richmond visualized a composite garrison of legionaries (six centuries) and cavalry (seven *turmae*) more or less half an *ala quingenaria*). Schönberger wanted to place four centuries and two, possibly four, *turmae*, in Oberstimm, but this has now been increased to six centuries and four *turmae*, thus a complete *cohors quingenaria equitata*. ¹²

Study of the literature concerning the possible garrisoning of castella in general, makes clear that it is impossible to accommodate a *cohors quingenaria peditata* or *equitata* in *castellum* 1. ¹³ Six identical barracks, each for eighty men, are necessary for a *cohors quingenaria peditata*. The *retentura*, however, contains eight barracks, identical as far as the number and subdivision of the *contubernia* are concerned. For a *cohors quingenaria equitata*, ten barracks would be required, six for the centuries and four for the *turmae*. ¹⁴ In the otherwise incompletely excavated left

⁶ G. Ulbert, 1959, pp. 83–87.

⁷ E. Ritterling, 1913; H. Schönberger, 1969, p. 152.

⁸ I. A. Richmond, 1968.

⁹ H. Schönberger, 1971; 1972.

¹⁰ However, see below p. 12!

¹¹ I. A. Richmond, 1968, p. 67.

¹² H. Schönberger, 1971, p. 39, resp. 1972, pp. 207–209, Abb. 1.

¹³ Other regular units need not be considered since, on the one hand, *castellum* 1 is too small for an *ala quingenaria* (*cf.* V. E. Nash-Williams, 1968, pp. 150, 152) and, on the other hand, *milliaria* units were not formed before the Flavian period (*cf.* E. Birley, 1966).

¹⁴ The assumption that two *turmae* should have to share a single barrack block (D. Baatz, 1965, p. 142; D. Breeze, in a paper read 29.08.69 at the VIIth Congress of Roman Frontier Studies) must be cast aside for Valkenburg Z.H., *castellum* 1, considering the scanty dimensions of the *contubernia* and their relatively small number.

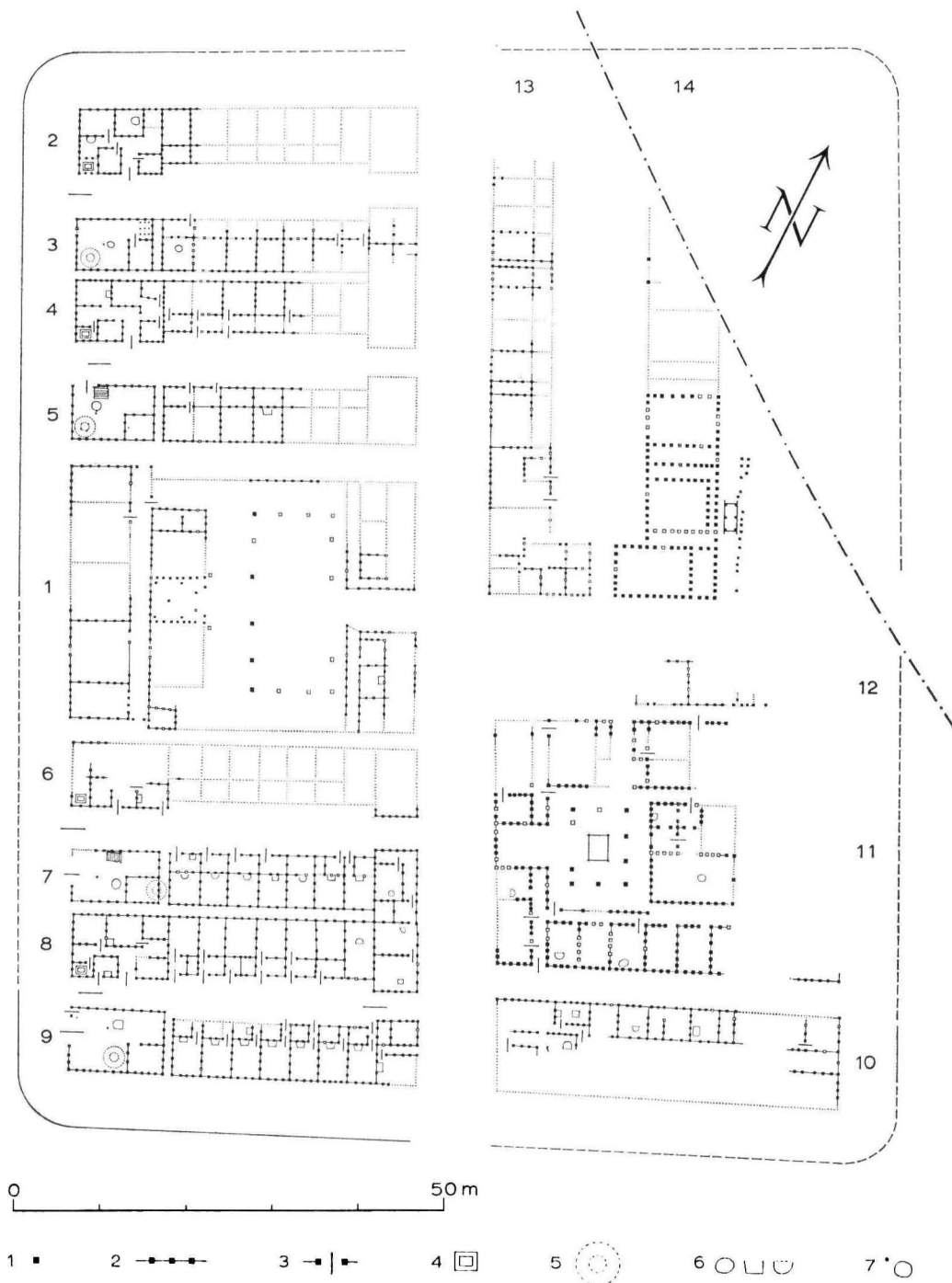


Fig. 3. Valkenburg Z.H. 1, groundplan: timber uprights (1), wattle and daub walls (2), thresholds (3), latrines (4), treadmills (5), hearths (6) and fire-pits (7).

praetentura, there is room for two *turmae* at the most: building 13, the southern part for the officers and the northern part divided by a gangway level with building 3/4 (building 14 is a stable and the area eastwards was undeveloped!).

The two remaining *turmae* would then have to be placed in the *retentura*. Which pair of the eight barrack blocks there could be considered? At first sight all eight blocks appear to be identical, each with seven *contubernia* of similar shape. Quite apart from the difficulty of dividing thirty men amongst seven *contubernia*—assuming that the *decurio* and *duplicarius* would have occupied the western and eastern end-buildings respectively—it is just the officers' quarters at the western end which display noticeable differences. In this respect the barracks are far from being identical. In place of the 6-2 division, it is 4-4 and alternating at that. While buildings 2, 4, 6 and 8 exhibit extensively divided officers' quarters, those of 3, 5, 7 and 9 are simple in the extreme.¹⁵ Thinking along the lines of hierarchy, one considers a difference of rank between those officers occupying the first or the second type of quarters: the difference between *centuriones* and *decuriones*? This would, in fact, imply that the quarters for the four *turmae* of a *cohors quingenaria equitata* alternated with those of four centuries in the *retentura*, and that the remaining two centuries would have to find place in the left *praetentura* next to the stables! This sort of mixing of cavalry and infantry would be unthinkable in military planning. Moreover the alternating 4-4 division suggests rather the *unity* of an extensively subdivided end-building and a simple end-building, thus creating the four units 2-3, 4-5, 6-7 and 8-9. Each unit would comprise a centurion's house (subdivided western end), quarters for underofficers (eastern end-building), 14 rooms of 5.8/6.5 × 3/3.8 m and a sort of storage space (simple western end-building), which in three of the four cases are detached and are provided with an extra wide entry. Four centuries could be accommodated in these four units without difficulty: 13 *contubernia* (13 × 6 = 78) being available for the purpose, since the 14th room cannot have had this function (not subdivided into *arma* and *papilio*, hearth placed differently).¹⁷

Renewed study of the field drawings of the 'simple end-buildings' 3, 5, 7 and 9 finally resulted in the surprising but unavoidable conclusion that

¹⁵ Why D. Baatz chose to represent Valkenburg 1 by a barrack with simple end-building for his plate of barrack types is puzzling, the more since he thereby suppressed a *contubernium* (1965, p. 143, Abb. 2 : 19).

¹⁶ This also appears to be the solution for Hod Hill, where I. A. Richmond (1968, p. 79) wanted to house six centuries in barracks of almost equal size to those in Valkenburg 1, with the observation that these centuries would have to be 'in varying degrees below strength'. See also note 22.

¹⁷ Noticed by B. L. van Beek. It has been observed only once, in building 8, but appears several times in Germany (cf. D. Baatz, 1965, p. 142, Abb. 2 : 8; also Abb. 2 : 2 & 4) and England (Hod Hill, I. A. Richmond, 1968, p. 80).

they were never intended as accommodation for anyone, let alone officers, but were constructed for another, specific, purpose. Although the only subdivision, the room of 4×4.20 m in the south-east corner, displays no distinctive characteristics, this is not the case with the remaining large area. Mention has already been made of the abnormally wide doors (established for 5, 7 and 9) and the fact that 5, 7 and 9 are detached from the associated row of contubernia. Contrary to the situation in the centurion's quarters, latrines are absent, and only fire-pits are present (in 3, 5 and 9) instead of built hearths as in 2 (?), 4, 6 and 8 (and frequently in the papiliones). Noteworthy is a setting of posts, three rows by three, in the north-east corner of 3, which suggests a raised platform; plankings lay against the north walls of 5 and 7.

Still more striking is the circular track in the south-west corner of 3 and 5, which at once calls to mind the well-preserved substructure of a treadmill, unearthed from the intervallum of castellum 2/3 west of the porta principalis dextra in 1948.¹⁸ The rectangle of planks against the south wall of 9 may well also represent a treadmill substructure. That the 'simple end-buildings' were erected some time later than the detached series of contubernia (with the exception of 3) seems to be proved in 7.¹⁹ Here, the walls appear to cut through traces of earlier constructions: drainage ditches around rectangular areas (originally some 3.50×3.80 m) within which were indications of posts or pegs which had been pulled out (tent pegs? thus a camping site?)²⁰ and, to cap it all, the track of a treadmill cut by the eastern wall. Evidently a treadmill had functioned there for some time in the open.

An eloquent confirmation is provided by the finds. We will take those from 9 as our examples. Compared with the commandant's quarters (approximately 2/3 of 870 m² excavated) and the centurion's quarters (approximately 70 m²) in building 4, the end-building of building 9 (78 m²) was kept far from tidy: minimum 24, 21 and 50 objects (or fragments) respectively were found on the floors of the three buildings. The floor in the north-east corner of the end-building ($0.20 \div$ =old surface level) in particular, was strewn with pottery sherds, an iron axe, a pick-axe, a mattock and a large wooden mallet.

Remarkable too is the total absence of animal bones in contrast to the living quarters as barracks, centurions' and commandants' quarters. Furthermore, the presence of a runnel and the discovery of a pointed rectangular pole (length 2 m, perhaps a stake from the palisade?) are mentioned in the excavation note book (29.06.1948).

It seems natural to assume that the subsequently constructed simple end-buildings 3, 5, 7 and 9 were work- and storage-places, where grain was stored (on platforms whether raised or not), dried (fire-pits) and

¹⁸ A. E. van Giffen, 1955, pp. 76 & 117, pl. 15 & 15a, afb. 23 & 26.

¹⁹ And also 3?

²⁰ W. Groenman-van Waateringe, 1967, p. 104.

ground (treadmills), where waggons could be kept (very wide thresholds), where, fairly certainly, metal was worked, and, for all we know, where tents could be stowed.²¹

The pairs of buildings 2-3, 4-5, 6-7 and 8-9, so long held to be *strigae*, appear in fact to be intended to accommodate a single century, as has been argued above. In other words, they are simply bipartite barracks for one century. Why this division? Undoubtedly because it was impossible to place four barracks at least 60 m long in the area of 38 × 40 m available on either side of the *principia*. This practice is probably restricted to small *castella* with a broad front of the period of Caligula and Claudius which saw the initiation of so many strategic commissions.²² As a bonus, there remained the four open spaces on which the simple end-buildings were later raised: four 'fabriculae' instead of one single *fabrica*.^{22a}

Cavalrymen and their mounts will indeed have been accommodated in the two buildings in the left *praetentura* – as had been assumed right from the very start. They have, as yet, not been sufficiently excavated to allow a firm estimation of numbers. The central section of the building along the *via principalis* appears to be divided into *contubernia*, and thus would have been intended to quarter the men. The building on massive wooden foundations, which lies parallel, contains areas of 5.60 × 7.80 m which must have served as stables flanked by passages. This interpretation is, furthermore, supported by the sewer 8 cm deep along the eastern end, a large sunken trough – in which lay a little pottery horse's head: a fragment of a lamp originally decorated with two of them!²³ – by the row of deeply hammered-in *round* posts parallel to the east wall, and – last but not least – the 14 m wide undeveloped strip of land upto the *intervallum*,²⁴ in which was buried a horse's skull.²⁵

²¹ Cf. H. von Petrikovits, 1970, pp. 230 and 244-245.

²² The only analogies which present themselves are a number of buildings at Hod Hill: I-X, especially VII-VIII (with 13 *contubernia*?) and IX-X. See I. A. Richmond, 1968, fig. 47, 62, resp. 45A-45B. See also note 16.

^{22a} A number of 30-32 per barrack as mentioned by Baatz for *Kastell Hesselbach* (Baatz, 1973, p. 59) seems correct. The reasons for calling such a unit a century are somewhat obscure. Furthermore, the arrangement of a barrack with simple end-building (1) alongside a barrack with extensively divided end-building (2) is strongly reminiscent of the bipartite barracks with *fabriculae* and officers' quarters in Valkenburg 1.

²³ 1941: 586. J. L. Cleveringa, in: A. E. van Giffen, 1948, pp. 238-239, afb. 64 : 2.

²⁴ Cf. A. Fox & W. L. D. Ravenhill (n.d.), p. 3: 'We suggest that these open spaces on the margin of the fort were used to picket the horses of a mixed unit, instead of building permanent stables as at Valkenburg, Holland.' In fact both are necessary, permanent stables and open spaces, for grooming etc. of the horses.

²⁵ The situation appears to be comparable with what I. A. Richmond describes in Hod Hill (1968, p. 88, fig. 62), as 'a compound in the NE corner some 80 by 100 feet in area divided from the rest of the fort by a palisade-trench' which he regards as a storage-dump. Within the palisade-trench was a 'tank' as at Valkenburg.

An inscription on the exterior of a *tabula cerata* fragment points to the presence of infantry *and* cavalry: Tigernilo mil(iti)/c(o)hor(tis) III Gallor(um). The graffito]imi > Classici and 35 bronze belt-plates indicate the presence of infantry,²⁶ and the graffito eq(ues) Iunius and items of bronze harness (barnacles, hangers) are evidence for cavalry. See *Appendix 5*.

CASTELLUM 2/3

(fig. 4–5)

The lay-out of castellum 2/3²⁷ differs considerably from that of 1. Four barracks, built in pairs back to back fill the left retentura. The constructions in the right retentura consist of a similar double barrack, with in addition a rectangular building, the southern half of which is divided into six equal rooms by five internal walls. The as yet unexcavated northern half would probably have been pretty well identical. At the most, one of the buildings in the praetentura—in the right half—can also be regarded as a double barrack. Between the extensively subdivided officers' quarters at each end are located six contubernia. In four barracks the papilio and arma are of equal size. This type of barrack could on no account have housed a century. In itself the proportionately very large arma is of great importance.

Comparable double barracks are known from the more or less contemporary castra at Neuss, where they occur with hemistrigia with ten contubernia for infantry (legionaries as well as auxiliaries).²⁸ On the basis of the finds occurring there C. Koenen suggested that these double barracks should be assigned to cavalry.²⁹ The exceptionally large arma would be explained by the extensive equipment carried by the cavalymen. If a barrack block was intended to accommodate a single turma (32 horsemen, including the decurio and the duplicarius), it would result in five cavalymen per contubernium.³⁰ The eight barracks of Valkenburg 2/3, in that case, could house eight turmae or $8 \times 32 = 256$ men, *i.e.* exactly half an ala quingenaria. If the large building with the double (?) range of six 8×6 m rooms, each with a deep (muck?) channel on the south

²⁶ L. Lindenschmit, 1882, p. 9.

²⁷ Until 1962 considered as separate castella 2 and 3. The ground plans were, in fact, pretty well identical. In our opinion this is a single castellum, certain buildings of which were altered in the course of time. Since 1967 it has been referred to as 2/3.

²⁸ C. Koenen, 1904, Taf. VII: 48–51.

²⁹ C. Koenen, 1904, pp. 143–145. H. Lehner, 1904, pp. 367, 372–373, Taf. XXXA.

³⁰ Barracks with six contubernia have also been identified in Nanstallon fort in Cornwall, though they were considered 'rather ample' for a turma (D. R. Wilson, 1970, p. 298).

2/3

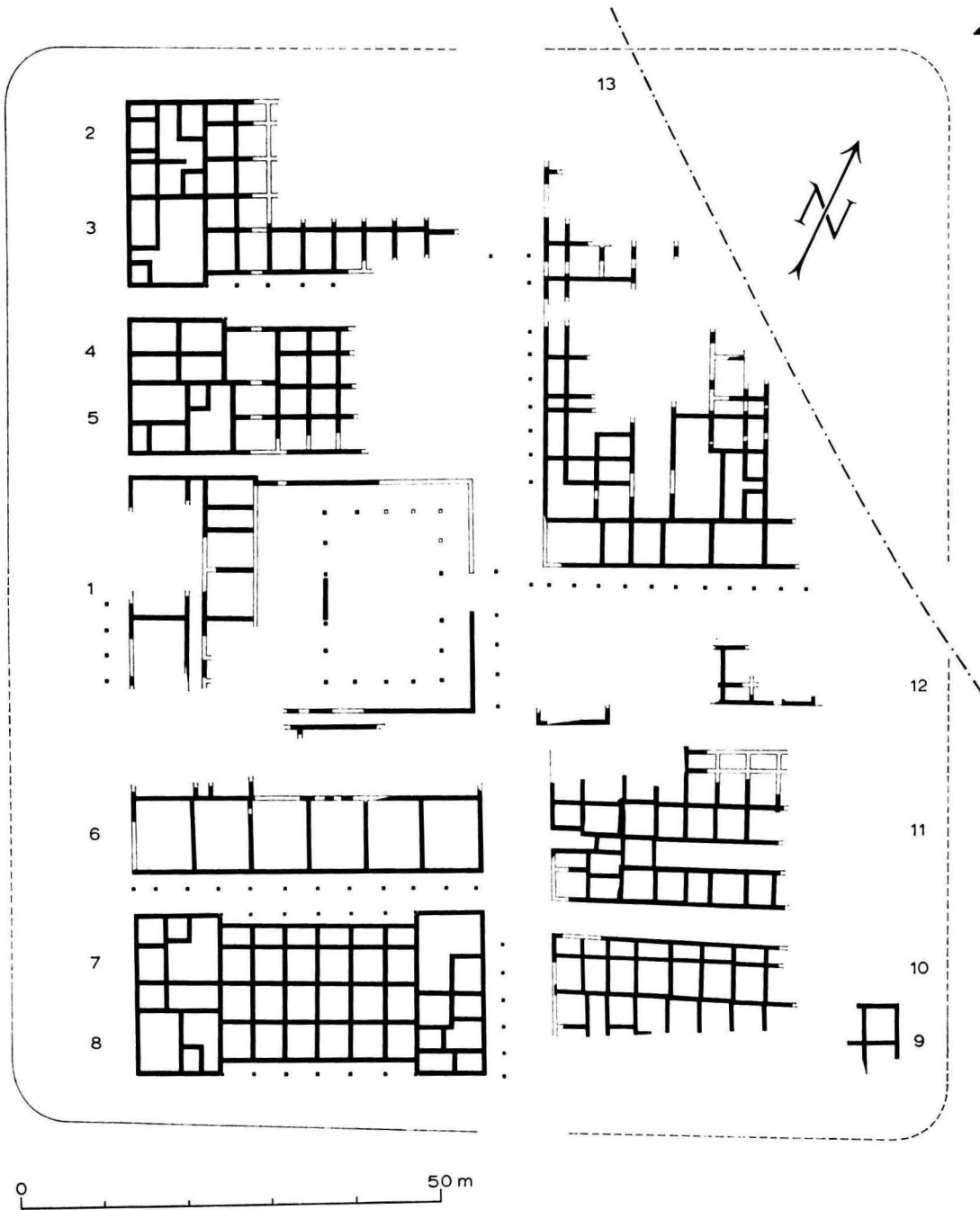


Fig. 4. Valkenburg Z.H. 2/3, groundplan.

side, were meant for stabling (each room for 16 horses?) a maximum of $12 \times 16 = 192$ horses could have been stalled—exactly sufficient for the six *turmae* in the *retentura*! The stables for the mounts belonging to the two *turmae* in the right *praetentura* must be sought in that area.

The following points strongly support an occupation exclusively of cavalry:

(a) the exceptional width of the *intervallum* behind the *retentura*, which may be explained by the presence of some 200 horses,

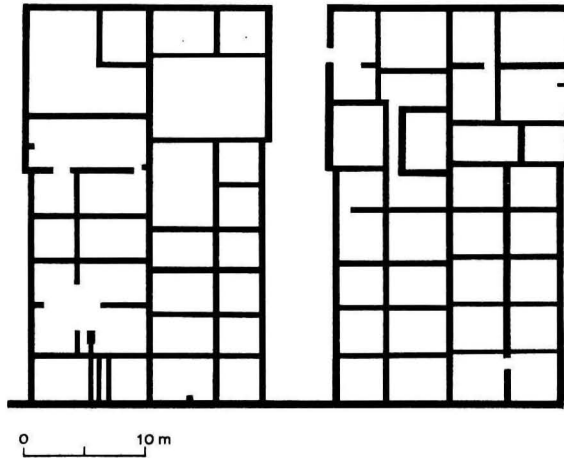


Fig. 5. Neuss/Novaesium, cavalry barracks 48, 49, 50 and 51.

(b) the uncommonly large officers' quarters—larger than the centurions' houses of 1—which would suggest *decurions* of an *ala*,

(c) the absence of belt-plates as described under *castellum* 1.²⁶

Furthermore a graffito *Turma Iuli* and a number of items of equipment are evidence for the presence of cavalry: leather horse trappings, bronze hangers and perhaps a bone component of a bow. See *Appendix 6*.

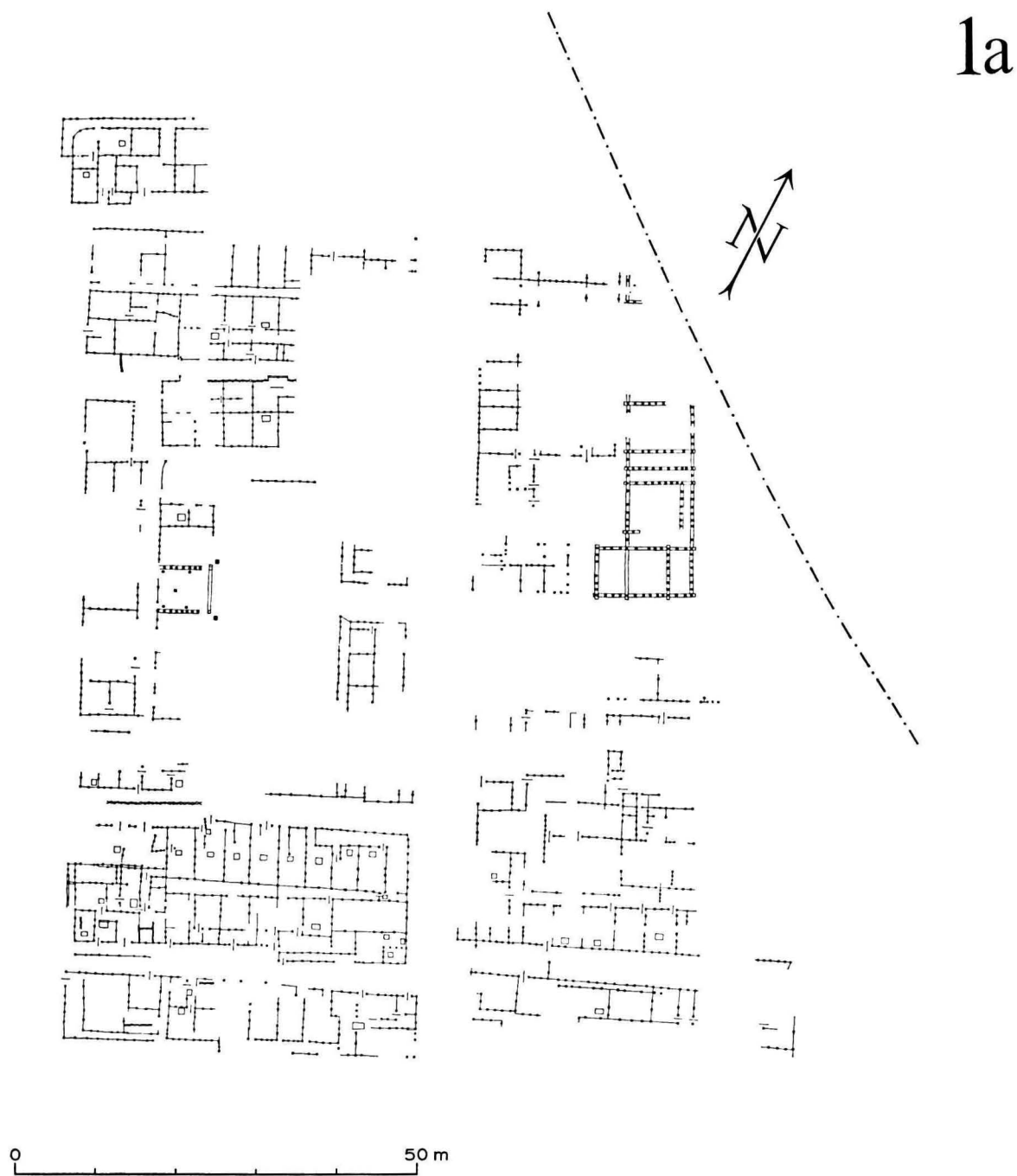


Fig. 6. Valkenburg Z.H., adaptation phase 1a, groundplan.

ADAPTATION PHASE 1a

(fig. 6–8)

The importance of the adaptation phase 1a only became clear after an idea of the garrisoning of castellum 2/3 had been obtained. The plan of 1a does not represent a separate castellum, but is a combination of elements distinguished at levels 0.00 and 0.20 +N.A.P., belonging chiefly to 1, plus a few walls of 2/3, and, in the left and right retentura, a number of elements exclusively of the adaptation phase. Noteworthy in this context is the enlargement of the western and eastern end-buildings over the intervallum and via principalis as well as in the direction of the mens' quarters. This is most obvious in the right retentura. It results in a diminution of the area available for contubernia, the latter being cut down from seven to six. At the same time there is a change in the division of the contubernia, most obvious in the left retentura, though also apparent in the right; the arma is almost doubled in size and becomes virtually as large as the papilio. The type of the barrack block created

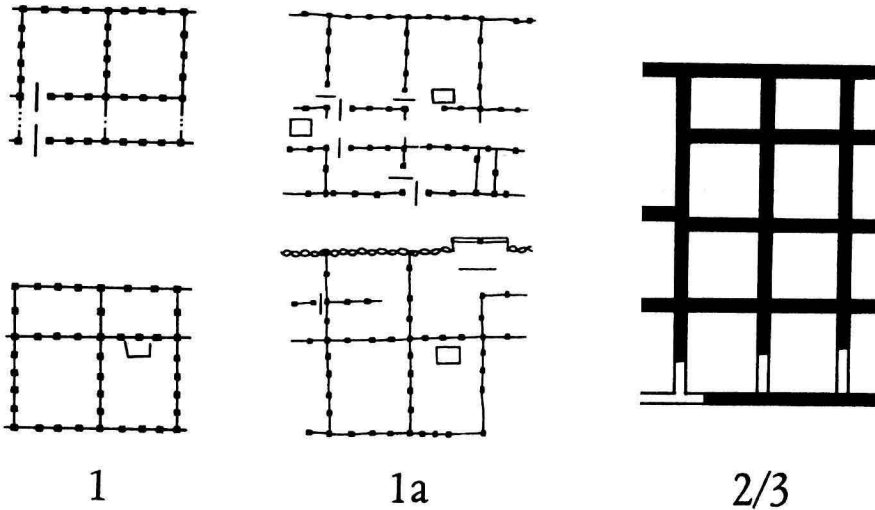


Fig. 7. Valkenburg Z.H. 1, 1a and 2/3, contubernia of barracks in the left retentura.

by these alterations shows a great similarity with that of castellum 2/3: *i.e.* large end-buildings, six contubernia per barrack and a large arma. In the left praetentura the space between the left barrack and the stable was filled up with – as far as can be established from the scanty remains – quarters for men, with a large arma. In the valetudinarium there appear to be few changes and the principia, commandant's dwelling and stables do not seem to have been altered.

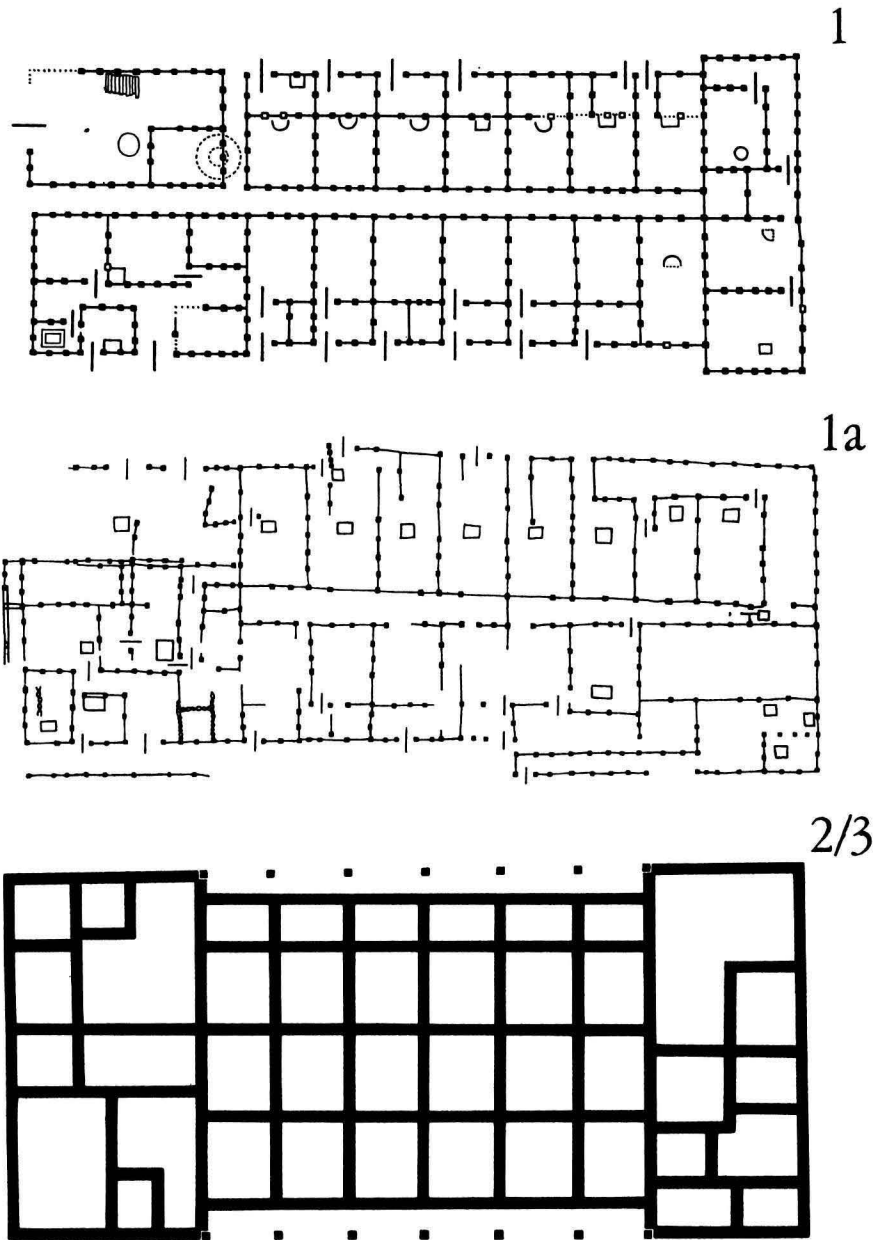


Fig. 8. Valkenburg Z.H. 1, 1a and 2/3, barracks in the right retentura.

Why this adaptation? Undoubtedly because castellum 1, built for a composite garrison of infantry and cavalry had suddenly to accommodate part of an ala—as has already been established for castellum 2/3. The available accommodation naturally did not correspond to the new requirements. An adaptation was therefore necessary, but could not, of course, be completed in a day. Thus the alterations are not contemporary over the entire castellum, were not carried out in the principia, commandant's dwelling or stables, but only in the quarters for officers and men. A cavalryman simply required more room for his equipment, the officers were accustomed to more commodious rooms and for a turma of 30 men, six contubernia were quite adequate. The somewhat cluttered adaptation phase 1a heralds the entry of the unit which would later build 2/3. Sections of horizontal wattle work, clearly of native tradition—unknown in 1 and 2/3—and a noticeable quantity of native pottery suggest that the occupiers came from nearby: from the ala Cananefatium which was fairly certainly stationed in these parts till 69 AD?³¹

A number of items of equipment point to the presence of cavalry in 1a: a bronze headstall, bronze hangers, bronze barnacles, a bronze bell and a leather saddle. See *Appendix 7*.

³¹ In Velsen N.H. till 28 AD?

CONCLUSION

(fig. 9)

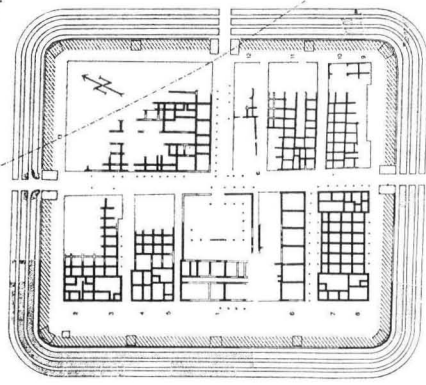
Finally we recapitulate: Valkenburg Z.H. 1 was built for a vexillatio, composed of four centuries and, at the most, two turmae, subtracted from a cohors III Gallorum equitata. The infantry were accommodated in the retentura in four bipartite barracks, and the cavalry in the left praetentura. After a short period of time the vexillatio was withdrawn.

Thereupon followed the adaptation of the infantry barrack blocks for cavalry accommodation; the seven contubernia of the half-barracks were reduced to six, the papilio and arma made equal in size and the officers' quarters were enlarged. The adapted temporary accommodation – 1a – was replaced by the new castellum 2/3 which was built for 8 (?) turmae, a large stable being situated next to the principia and two barrack blocks in the right praetentura. The garrison of castellum 4, erected in or shortly after 70 AD, and its two successors 5 and 6 – will have been a cohors quingenaria equitata – the cohors IIII Tracum – which has been recently identified.

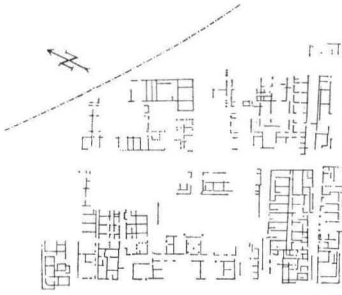
In castella 1, 2/3 and adaptation phase 1a certain principles, perhaps evidenced elsewhere as well, appear:

- (1) the bipartite barracks for a single century (for optimal efficiency regarding encampment/defence),
- (2) the division of the fabrica into small detached buildings (resulting in self-supporting centuries?),
- (3) leaving a strip along a building (a stable!) undeveloped, which reflects the presence of turmae,
- (4) the widened rear intervallum – characteristic for a cavalry garrison?
- (5) an equally large papilio and arma – indicating cavalry.

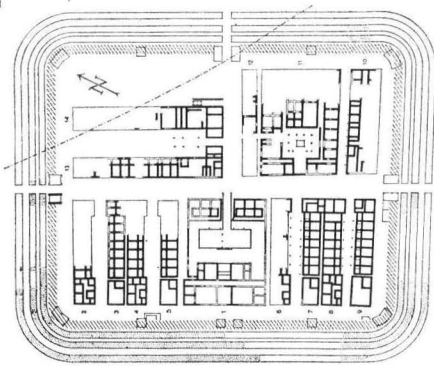
2/3



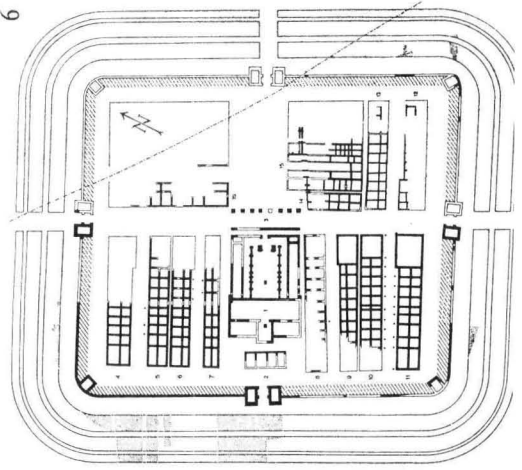
1a



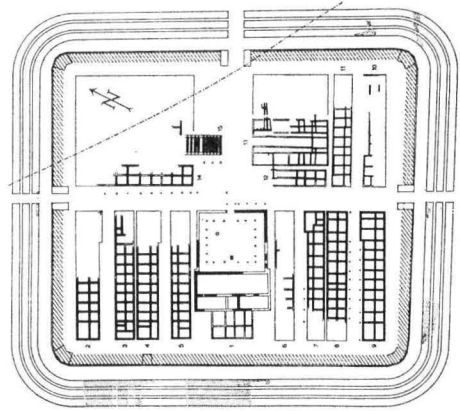
1



6



5



4

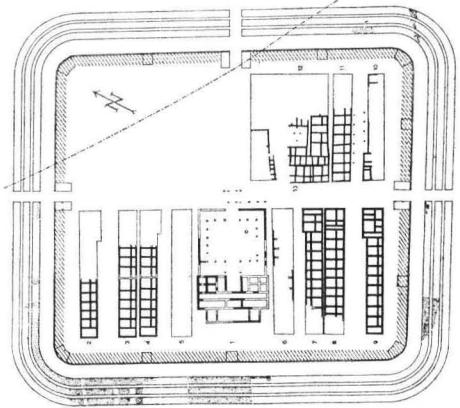


Fig. 9. Valkenburg Z.H., adaptation phase 1a inserted in fig. 1.

APPENDIX 1

Measurements ³² of castella 1 and 2/3 and adaptation phase 1a.

	1	2/3	1a
Total length of barracks	39 - 39.9	40.3 - 40.7	39.9 - 43.2
Idem of 7/6 contubernia	23.4 - 23.8	22 - 23	20.2 - 23.6(?)
Measurements of centurions' or decurions' quarters/fabriculae in			
E-W direction	8.8 - 11	9 - 12	11 - 14.8
Idem in N-S direction	5.8 - 7.4	7.4 - 11	6.6 - 10.4
Area of centurions' or decurions' quarters/fabriculae ³³ in m ²	51.04-79.2	78.4 - 105.84	74.8 - 153.92
Measurements underofficers' quarters in E-W direction	4.8 - 5.6	7.6 - 9.6	5.8 - 9.4
Idem in N-S direction	7.2 - 8.2	6.6 - 9.5	7.5 - 8.4
Area of underofficers' quarters in m ²	39.36-40.32	71.44- 72.20	69.92- 77.28
Length of individual contubernia	5.8 - 6.5	6.4 - 11	6 - 8
Idem width	3 - 3.8	3.5 - 4	3.1 - 3.6
Length of papiliones	3.6 - 4.5	3.8 - 5	3.6 - 4.5
Idem of armae	1.9 - 2.2	2.2 - 4.6/6.8	1.8 - 4
Total length of stables	56 (evt. 50)	48	as 1
Individual compartments in stables included the N-S corridor	5.6 × 7.8	6.5/7 × 8.6	as 1
Idem without N-S corridor	5.6 × 6.6	6.5/7 × 5	as 1
Width of spatium conversantibus between centurions' or decurions' quarters/fabriculae	3.8 - 5.2		3 - 5.7
Idem between contubernia	5.6 - 6.4		2.6 - 4.8
Idem between underofficers' quarters	3.4 - 3.9		3.8
Width of via principalis	8.8 - 9.2	8.4	6.3 - 8
Idem of intervallum			
N of building 2	6.5	6	
W of 2-9 resp. 8	5.8 - 6.4	14 - 14.8	
W of 14	14		
S of 9 resp. 8	6.4	5.8 - 6.6	
E of 10 resp. 9	6.6	5.8	

³² All measurements in m, unless otherwise stated.

³³ Fabriculae 3, 5, 7 and 9 resp. 51.04, 58.28, 58.00 and 77.76 m², except for the latter of considerably smaller dimensions than the officers' quarters.

Comparable measurements in Hod Hill, ³⁴ Nanstallon, ³⁵ Neuss ³⁶ and Oberstimm. ³⁷

1. *Hod Hill.*

	legionary barracks	cavalry barracks
Total length of barracks	35.4	36-42
Idem of contubernia	24.6	25
Length of centurions'/decurions' quarters	11.1-12	12-16
Idem width	7.5	6-9
Area of centurions'/decurions' quarters in m ²	83.25	72-144
Length of individual contubernia	3-3.6	ca. 5
Idem width	2.4-3	ca. 4
Width of spatium conversantibus between centurions' quarters	ca. 6	
Idem between contubernia	ca. 12	
Width of spatium conversantibus between officers' quarters	ca. 7	ca. 7
Idem between contubernia	ca. 11	ca. 14
Width of via principalis		ca. 12
Total length of stables		56.1-58.8
Individual compartments in stables		3.3 × 5.4; 3.3 × 3.6

³⁴ I. A. Richmond, 1968, fig. 62.

³⁵ A. Fox & W. Ravenhill, 1972, fig. 5.

³⁶ C. Koenen, 1904, Taf. VII.

³⁷ H. Schönberger, 1971, Abb. 2; 1972, Abb. 1.

2. *Nanstallon*

	infantry barrack III	cavalry barrack IV
Total length of barracks	31.5	32.4
Idem of 7/6 ³⁸ contubernia	24.1	21.6
Measurements of centurions'/decurions' quarters in N-S direction	7.4	8.4
Idem in E-W direction	3.8	7.2
Area of centurions'/decurions' quarters in m ²	28.12	60.48
Measurements underofficers' quarters in N-S direction	7.4	8.4
Idem in E-W direction	3.6	3.6
Area of underofficers' quarters in m ²	26.64	30.24
Length of individual contubernia	7.4	8.4
Idem width	3.3	3.6
Measurements of papiliones in N-S direction	4.8	4.9
Idem of armae	2.6	3.5
Width of spatium conversantibus		3-3.6
Idem of via principalis		ca. 6.5
Idem of intervallum E of barracks 5 and 6		ca. 5.5
Original width of intervallum N of barrack IV and S of barrack I		17

3. *Neuss*

Total length of cavalry barracks	33
Idem of 6 contubernia	20-22
Length of decurions' quarters	11-13
Idem width	ca. 10
Area of decurions' quarters in m ²	110-130
Length of individual contubernia	9-9.5
Idem width	ca. 4
Length of papiliones	ca. 5-5.5
Idem of armae	ca. 4-4.5

³⁸ In contrast to the publication in *Britannia* 3, 1972, pp. 56-111, especially 80-81, cf. letter from A. Fox to W. Groenman-van Waateringe: 'I have not any "double barracks" like those at Valkenburg 2/3, but the barracks were of two sizes: first those with 7 double cubicles, and a small officers' quarters which I have assigned to infantry and second those with 6 double cubicles and a larger officers' quarters which I have assigned to cavalry. Both barracks had a larger extra room at the gable-end on the *via praetoria*: one of these produced evidence of *metal working and a quern* [our italics], such as you record at Valkenburg. (I had thought they were for the underofficers).' If the evidence for metal working and the quern indicate that this cubicle was used as a *fabricula*, perhaps we have here the same arrangement as at Valkenburg 1 with bipartite barracks of 13 contubernia and large officers' quarters. In that case the difference in size of the contubernia, especially the armae, is not explained.

4. *Oberstimm*

Total length of barracks 5 and 6	47
Idem of contubernia	ca. 25
Length of centurions' quarters	11-11.5
Idem width	8.5
Area of centurions' quarters in m ²	93.5-97.75
Length of individual contubernia	ca. 7
Idem width	3- 3.5
Length of papiliones	4.2
Length of armae	2.8
Width of spatium conversantibus between officers' quarters	ca. 5
Idem between contubernia	ca. 12
Width of via principalis between buildings 8 and 12	ca. 12
Original width of intervallum W of buildings 5 and 6	28
Idem W of 3	ca. 12
Idem N of 3	ca. 6.5

It is remarkable that, although the total length of the barracks in Valkenburg 2/3 is somewhat greater than in Valkenburg 1, the total length of the contubernia in 2/3 is less than in 1. This is caused by the larger sizes of the officers' quarters in 2/3 and the reduction from seven to six contubernia. Adaptation phase 1a is - for all measurements - intermediary between 1 and 2/3. The greater length of the individual contubernia in 2/3 as compared to 1 is not caused by the size of the papiliones (this remains pretty well constant), but more particularly by the enlargement of the armae. The same phenomenon occurs in Nanstallon. The contubernia of Valkenburg 1 are somewhat smaller than those of barrack III in Nanstallon and barracks 5 and 6 in Oberstimm. Those of Hod Hill are the smallest, because it seems that the arma is completely absent. The cavalry barracks in Valkenburg 2/3 differ considerably in size. The smallest dimensions here are smaller than those for barrack IV in Nanstallon and the cavalry barracks of Neuss; the other ones are within the limits for these two castella. The officers' quarters in Nanstallon are extremely small, those of the other castella are similar in size. The total length of the barracks is the smallest in Nanstallon, closely followed by Neuss and the infantry barracks of Hod Hill. Oberstimm has the greatest length and Valkenburg 1, 2/3 and 1a and the cavalry barracks of Hod Hill are intermediate.

The lengths of the stables in Valkenburg 1 and Hod Hill are pretty well comparable; the lengths of the stables in Valkenburg 2/3 are somewhat smaller. The individual compartments in the stables of Valkenburg seem to be twice the size of those at Hod Hill. This is caused by the smaller width of the Hod Hill stables.

The width of the spatia conversantibus in Valkenburg and Nanstallon is somewhat small in comparison to Hod Hill and Oberstimm; the same

holds for the *via principalis*. The minimum widths of the *intervalla* are practically the same in Valkenburg, Nanstallon and Oberstimm (in Hod Hill this is not easy to determine, but is certainly larger), but the extra open spaces in Hod Hill and Oberstimm are again larger than those in Valkenburg and Nanstallon, where the greatest width is about 14–17 m.

From these measurements one gets the idea that the available space for the necessary buildings had to be used with greater economy in Nanstallon and Valkenburg than in Hod Hill and Oberstimm. This had no effect on the size of the buildings, but had on the open spaces such as *spatia conversantibus*, roads and *intervalla*.

APPENDIX 2

Castellum 1, building 4, centurion's quarters, mobilia (fig. 10, pl. 3–4)
(B. L. van Beek).

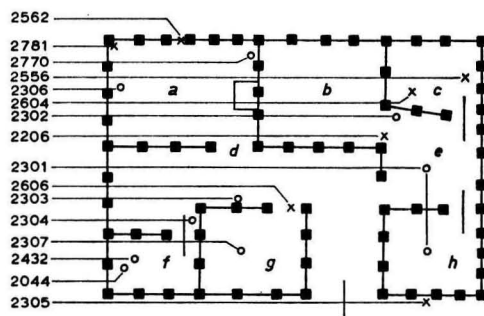


Fig. 10. Valkenburg Z.H. 1, building 4, centurion's quarters, distribution of find numbers (x=exact find spot; o=from immediate vicinity).

From room *a*:

- 1³⁹ 2781 – 1942 – IIc/d – 0.20 ÷.⁴⁷ From beneath wall in the NW corner.
Decorated sheet bronze sword scabbard (l. 45.2 cm).
- 2 2306 – 1942 – IIb – 0.00–0.20 ÷. Bowl of blue-green glass, Hofheim 1,
complete profile (2=2).⁴⁰
- 3 2770 – 1942 – IIc/d – 0.00–0.20 ÷. Against wall between rooms *a* and *b*.
Bronze handle, bent over at one end, other end broken off.

³⁹ The numbers 1–16 refer to pl. 3–4; the numbers 2781 etc. to fig. 10.

⁴⁰ An example of a description: Drag. 27g (27k), foot ring-carination (12=6+2 & 4)=Drag. 27 big (or small), preserved in 12 fragments from foot ring to above carination, in groups of 6 and 2 matching sherds and 4 not matching ones.

- 4 *Idem.* Drag. 24/25 g, stamped SECVNDI (VND ligated) (W. Glasbergen, in A. E. van Giffen, 1955, pp. 145–146, nr. 330), with graffito S within foot ring, complete profile (9=9).
- 5 *Idem.* Drag. 24/25 g, carination.
- 6 2562 – 1942 – IIc/d – 0.00. Against outside N wall. Flagon, Hofheim 50, neck-lip.
- 7 *Idem.* Flagon, Hofheim 55, shoulder-neck with two-ribbed handle.
- 8 *Idem.* Amphora, two-ribbed handle.

From room *b* :

2206 – 1942 – IIb – about 0.20 ÷. Between rooms *b* and *e* (in the doorway). Bird bone (according to find lists; not seen).

From room *c* :

2604 – 1942 – IIb – 0.30 ÷. Cervical vertebra of sheep or goat (identification Mrs. L. H. van Wijngaarden-Bakker).

Idem. T.n.,⁴² wall fragment.

- 9 *Idem.* Amphora (?), two-ribbed handle.

2556 – 1942 – IIc/d – 0.20 +–0.00. Smooth ware, wall fragments (8=0 & 8).

Idem. Cooking pot, wall fragment.

Idem. Amphora, wall fragment.

From room *d* :

2606 – 1942 – IIc/d – 0.40 ÷. In foundation trench between rooms *d* and *g*. Animal bone (according to find lists; not seen).

- 10 2303 – 1942 – IIb – 0.00–0.20 ÷. Hofheim 22, bottom-lower wall, red-brown varnish.

- 11 2304 – 1942 – IIb – 0.00–0.20 ÷. Hofheim 26 (?), bottom-lower wall, red-brown with black varnish.

Idem. Native ware, wall fragment.

From room *e* (see also room *h*):

- 12 2302 – 1942 – IIb – 0.00–0.20 ÷. Bronze belt-plate (see *Appendix 5*: 14).

From room *f* :

2432 – 1942 – IIb – . . . Animal bones from latrine (according to find lists; not seen).

2044 – 1942 – IIb – 0.00–0.20 ÷. Underneath wooden floor. Animal bones (according to find lists; not seen).

From room *g* :

- 13 2307 – 1942 – IIb – 0.00–0.20 ÷. Drag. 24/25 g, carination-rim.

From room *h*:

- 2301 - 1942 - IIb - 0.00-0.20 ÷. From rooms *e* and *h*. Piece of flint.
 14 *Idem*. Flagon, bottom-lower wall (4=4).
 15 *Idem*. Big amphora, handle (2=2).

From just S of room *h*:

- 16 2305 - 1942 - IIb - 0.20 ÷. Bronze brooch, Hofheim Ia.

In all from 70 m²: bronze sword scabbard 1, bronze handle 1, bronze belt-plate 1, bronze brooch 1, find numbers with animal bones 5, piece of flint 1, glass bowl 1, Hofheim 22 1, Hofheim 26 1, Drag. 24/25g 3, t.n. 1, Hofheim 50 2, Hofheim 55 1, smooth ware ≥ 3 ,⁴¹ cooking pot 1, amphorae 4, native ware 1.

It is apparent from fig. 15 that the majority of finds were excavated in the vicinity of the walls. This may well indicate that the floors were swept regularly, as was the case in the commandant's quarters (*cf.* W. Glasbergen, 1967, p. 60). The sword scabbard discovered in a dung pit under the wattle partition of the centurion's quarters is perhaps a construction deposit.

APPENDIX 3

Castellum 1, building 9, fabricula, mobilia (fig. 11, pl. 5-7).

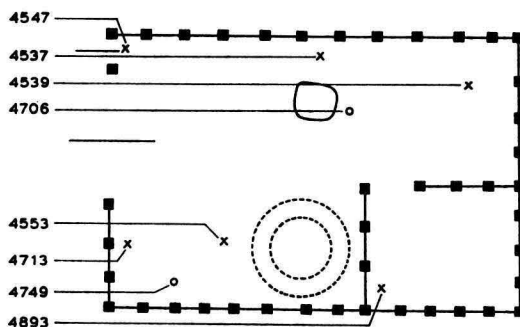


Fig. 11. Valkenburg Z.H. 1, building 9, fabricula, distribution of find numbers (x=exact find spot; o=from immediate vicinity).

From small room:

- 4893 - 1948 - VIc/d - 0.20 ÷-0.40 ÷. Coin with countermark (according to find lists; not seen).

⁴¹ ≥ 3 =minimum number of pots is three.

3⁴² *Idem.* Drag. 15/17, stamped TERTIVS·FE, 9/10 preserved (8=8).

From large room:

- 2 4537 - 1948 - VIc/d - 0.20 ÷. Hofheim 22, lower wall-rim, with barbotine decoration of upside-down drops (2=0 & 2).
- 3 *Idem.* Drag. 15/17, carination-rim, matching 4539: carination-rim.
- 3 *Idem.* Ritt. 8, upper wall-rim (2=2).
- 3 *Idem.* Drag. 24/25 g, upper wall-rim, matching 4706.
- 5 *Idem.* Hofheim 50, foot ring-mouth, not coherent, about ½ preserved (33=18+3+3+2+2 & 5); shoulder-lip with fragment of three-ribbed handle, matching 4539: part of three-ribbed handle; four-ribbed handle, matching 4539: shoulder-mouth with joint of four-ribbed handle; 2 three-ribbed handles.
- 5 *Idem.* Very probably Hofheim 50, neck with handle joint and about 1/7 of lower wall (46=46); foot ring-shoulder, about 1/4 preserved (9=9); neck.
- 5 *Idem.* Hofheim 50? upper wall-shoulder with handle joint (10=5+3+2); lower wall (2=2); wall fragment (2=0 & 2, one matching 4539).
- 6 *Idem.* Cooking pot, thin-walled vessel with profiled wall and rim and metallic shine, upper wall-rim (4=3 & 1).
4539 - 1948 - VIc/d - 0.20 ÷. Copper coin (according to find lists; not seen).
- 0 *Idem.* Iron axe (l. 21.2 cm); pick-axe (l. 26.7 cm), with remains of wood in shaft hole; lump of iron oxide (l. 20.2 cm); socketed arrow-head (l. 9 cm); bent nail.
- 0 *Idem.* Disk of sheet bronze with traces of solder on one side along the rim (bottom of bronze cask?) (dm. 5.7 cm); rectangular piece of sheet bronze with five perforations (l. 14.4 cm); fragmentary bronze pendant, decorated on one side (l. 5 cm).
- 0 *Idem.* Wooden mallet (originally fragment of a spoked wheel?) (preserved as modern copy only) (to tap the dowelled joints of the wooden framework of the buildings into place during their construction?) (h. 36.2 cm).

⁴² The numbers 0-9 refer to the following find categories (see also pl. 6-7):
0=finds providing specific information (epigraphica, coins, military equipment, tools, building materials, naturalia, varia)

1=glass

2=varnished ware

3=terra sigillata (t.s.)

4=terra nigra (t.n.) and Gallo-Belgic ware

5=smooth ware (German: *glattwandig*)

6=cooking pots (German: *rauhwandig*)

7=mortaria

8=large amphorae

9=native ware.

The numbers 4893 etc. refer to fig. 11.

- 1 *Idem.* Unguentarium, body fragment, transparent pale blue-green.
- 2 *Idem.* Hofheim 22, bottom-lower wall, sand-faced.
- 3 *Idem.* Drag. 15/17, carination-rim (4=3 & 1); carination-rim, matching 4537: carination-rim.
- 3 *Idem.* Drag. 18, foot ring-upper wall (3=2 & 1); carination-rim (2=0 & 2).
- 3 *Idem.* Plate, lower wall (3=0 & 3).
- 3 *Idem.* Ritt. 8, lower wall-rim (5=2 & 3, one matching 4537: upper wall-rim).
- 3 *Idem.* Drag. 24/25k, foot ring-lower wall, with undeciphered fragment of stamp (2=2).
- 3 *Idem.* Drag. 27, upper wall-rim (2=0 & 2).
- 3 *Idem.* Drag. 27? foot ring-lower wall, stamped VAPVSO (VA ligated).
- 3 *Idem.* Cup, lower wall (5=0 & 5).
- 3 *Idem.* Ritt. 13, part adjoining pen hole.
- 4 *Idem.* Vase, foot ring-lower wall, with horizontally polished rilling; wall fragment (of same specimen?).
- 5 *Idem.* Hofheim 50, part of three-ribbed handle, matching 4537: shoulder-mouth; shoulder-mouth, with joint of four-ribbed handle, matching 4537: four-ribbed handle; neck-mouth, with handle joint (2=0 & 2); neck-mouth, with handle joint; four-ribbed handle.
- 5 *Idem.* Hofheim 50? wall fragments (8=0 & 8, one matching 4537).
- 5 *Idem.* Flagon? foot ring-lower wall, orange-brown (5=4 & 1).
- 5 *Idem.* Honey-jar? vessel with horizontally everted rim, upper wall-rim, secondarily burnt?
- 6 *Idem.* Cooking pots, thin-walled vessel with profiled wall and rim and metallic shine, bottom-lower wall (of same specimen as 4537?); vessel with beaded rim, rim; bottom-lower wall (of preceding one?); idem, shoulder-rim; shoulder & lower wall of preceding one? (in that case 3=0 & 3); small vessel with carinated shoulder and cylindrical rim, shoulder-rim (2=2); very probably cooking pot, bottom-lower wall; vessel with shallow neck and rounded rim, tar coating on the neck, shoulder-rim; as preceding one, but not of same specimen, shoulder-rim.
- 7 *Idem.* Mortarium, bottom-rim (horizontal) (2=2); bottom-lower wall, of preceding one?
- 8 *Idem.* Amphora, shoulder-mouth with handle joint (4=4), furthermore 3×3+4×2 & 19 (among which 1× shoulder-handle and 1× shoulder-neck), 40 in all (2-3 of another specimen?).
- 9 *Idem.* Native ware, shoulder-rim with oblique nail impressions at outside of rim, at shoulder brushed pattern.
4547 - 1948 - VIc/d - 0.20 ÷. Number on field drawing, finds missing or non-existent.
4553 - 1948 - VIc/d - 0.20 ÷. Bronze object (according to find lists; not seen).

- 3 *Idem.* Plate, foot ring.
 3 *Idem.* Drag. 24/25 g, upper wall-rim (2=2).
 3 *Idem.* Ritt. 12, foot ring-bottom-lower wall, upper wall-rim (flange broken off) (4=2 & 2).
 0 4749 - 1948 - VIc/d - 0.20 ÷. Two coins (see J. Gerritsen, in A. E. van Giffen, 1955, p. 172: 44, p. 177: 72), Claudius-Nero, resp. Commodus, *i.e.* evidently incorrectly numbered.
 3 4706 - 1948 - VIc/d - 0.00. Drag. 15/17, rim.
 3 *Idem.* Drag. 18, foot ring-carination, stamped]VI, ¼ preserved.
 3 *Idem.* Plate, bottom.
 3 *Idem.* Ritt. 8, rim.
 3 *Idem.* Drag. 24/25 g, ½ preserved, with graffito]RI[? (13=8+3 & 2).
 3 *Idem.* Drag. 24/25 k, lower wall-cordon, matching 4539.
 3 *Idem.* Drag. 27? foot ring-lower wall (2=2).
 4713 - 1948 - VIc/d - 0.00. Roman sherds and t.s. (according to find lists; not seen).
 0 *Idem.* Iron hinge (?) with hole (h. 7.9 cm).

In all from about 78 m²: (coin 1), iron axe 1, iron pick-axe 1, lump of iron oxide 1, socketed arrowhead 1, nail 1, iron hinge (?) 1, bottom of bronze cask (?) 1, bronze pendant 1, rectangular piece of sheet bronze 1, wooden mallet 1, bottle of glass 1, Hofheim 22 2, Drag. 15/17 >4, Drag. 18 >2, Ritt. 8 >1, Drag. 24/25 g >2, Drag. 24/25 k >1, Drag. 27 >1, Ritt. 12 1, Ritt. 13 1, t.n. vase >1, Hofheim 50 >11, flagon 1, honey-jar (?) 1, cooking pots 7, mortaria >1, large amphorae >1 native ware 1.

The terra sigillata shows the essential characteristics of the late experimental stage of South Gaulish production to be dated between 35-45 AD: finger impressions on the orangy-brown mat surface slip disclosing the ochreous paste beneath, spiral striations on both outer and inner surfaces, local scraping (with knife?), foot ring rough (where stuck onto drying surface after being dipped into slip, and not wiped before baking), irregularities often untidely concealed, clay fragments not worked away before baking (see W. Glasbergen, in A. E. van Giffen, 1948, p. 206, Technieken Ia-b; G. Simpson, in I. A. Richmond, 1968, p. 103).

APPENDIX 4

Castellum 1, building 11, commandant's quarters, mobilia (fig. 12, pl. 8-9) (M. D. de Weerd).

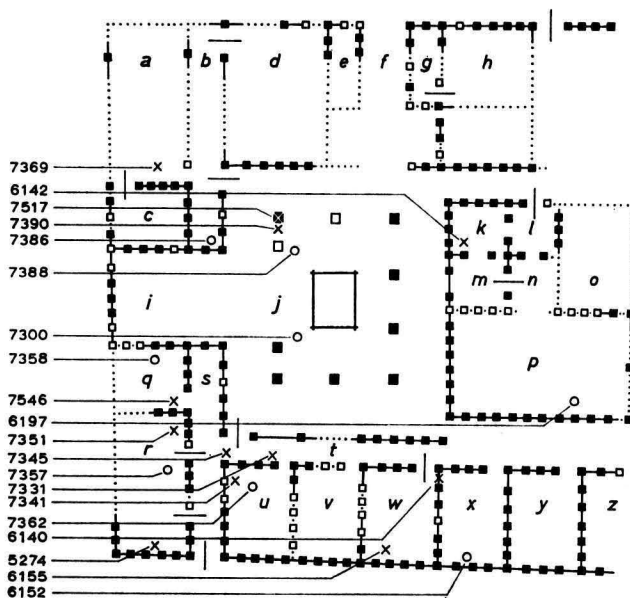


Fig. 12. Valkenburg Z.H. 1, building 11, commandant's quarters, distribution of find numbers (x=exact find spot; o=from immediate vicinity).

From room *a* :

7369 - 1962 - VIk - 0.10 ÷ -0.20 ÷. Animal bones (2).⁴³

Idem. Smooth ware, wall fragment.

From room *b* :

7386 - 1962 - VIk - 0.10 ÷ -0.20 ÷.⁴⁴ From rectangular concentration of charcoal. Animal bones (12).⁴³

Idem. Pebbles (2).

Idem. Native ware, wall fragment, smoothly polished.

From central court *j* :

¹⁴⁵ 7517 - 1962 - VIk - 0.40 ÷ -... In foundation pit for column of colonnade. Hofheim 50 (?), foot ring; fragment of four-ribbed handle.

⁴³ Sent to the B.A.I. in 1962; to be published by Dr. A. T. Clason.

⁴⁴ According to H. Praamstra, B.A.I., who worked out the stratigraphical allocation of the finds.

⁴⁵ The numbers 1-13 refer to pl. 8-9; the numbers 7369 etc. to fig. 12.

- Idem.* Smooth ware, wall fragments (4=0 & 4); neck with handle joint; shoulder-neck (3=3).
 7388 - 1962 - VIk - 0.10 ÷ - 0.20 ÷. Animal bone.⁴³
Idem. Two pieces of half-burnt wood.
Idem. Oxidized iron nail?
 2 7390 - 1962 - VIk - 0.10 ÷ - 0.20 ÷. Probably Hofheim 50 (?), foot ring-lower wall.
Idem. Smooth ware, wall fragments (20=4+2+2 & 12).
Idem. Shell.⁴³
 7300 - 1962 - VIk - 0.00 ÷ - 0.20 ÷. Animal bones (2).⁴³
Idem. Smooth ware, wall fragments (7=0 & 7).
 3 *Idem.* Cooking pot, bottom-wall, with fingertip impressions around base (crucible?); bottom-lower wall.

From room *k*:

- 6142 - 1951 - VIi - 0.20 ÷. Varnished ware, wall fragment.
 4 *Idem.* Drag. 15/17, lower wall-rim (6=6).
 5 *Idem.* Drag. 18, carination-rim.
 6 *Idem.* T.s., plate, foot ring-lower wall; bottom, stamped OFMACCAR (MA ligated).
 7 *Idem.* Drag. 24/25 g, wall-rim.
 8 *Idem.* T.n., plate, Brunsting 3.3, bottom-rim.
 9 *Idem.* Big amphora, two-ribbed handle.

From room *p*:

- 6197 - 1951 - VIi - 0.20 ÷. Animal bones (according to find lists; not seen).
 Without number - 1951 - VIi - 0.20 ÷. Hearth made of sherds (according to note on field drawing; not seen).

From room *q*:

- 7546 - 1962 - VIk - 0.40 ÷. From dung pit. Animal bones (2).⁴³
Idem. Big amphora, wall fragments (2=0 & 2).
 7358 - 1962 - VIk - 0.20 ÷. Animal bones (2).⁴³

From room *r*:

- 7351 - 1962 - VIk - 0.20 ÷. Animal bone and shells (6).⁴³
Idem. Drag. 27 k, lower wall.
 7357 - 1962 - VIk - 0.20 ÷. Animal bones (8).⁴³
Idem. Baked clay, daub from wattle and daub wall? (according to inventory; not seen).
 5274 - 1950 - VIh - 0.20 ÷. Skull in wattle and daub wall (according to find lists; not seen).

From room *s*:

7345 - 1962 - VIk - 0.20 ÷. Between rooms *s* and *t*. Iron, severely oxidized, with piece of wood (socket).

Idem. Cooking pot, bottom-lower wall.

From room *t*:

7331 - 1962 - VIk - 0.20 ÷. Against the wall between rooms *t* and *u*. Skull of a lynx (P. J. H. van Bree & A. T. Clason, 1971).

From room *u*:

7362 - 1962 - VIk - 0.20 ÷-0.40 ÷. ⁴⁴ Iron slag.

Idem. Smooth ware, wall fragment.

7341 - 1962 - VIk - 0.20 ÷. Against the wall between rooms *u* and *s*. Animal bones (5). ⁴³

From room *w*:

- 10 6155 - 1951 - VIh - 0.20 ÷. From hearth; find number on field drawing 0.20 +, but not in serial accordance with other find numbers on the same field drawing; found 0.20 ÷ according to find lists; field drawing 0.20 ÷ partly not drawn. Lamp, bottom-rim with two-ribbed handle and part of central disk.

Idem. Iron slag.

Idem. Drag. 18, carination-upper wall.

Idem. T.s., plate, bottom.

Idem. Drag. 27, lower wall.

Idem. Smooth ware, wall fragment.

- 11 *Idem.* Amphora, handle with circular cross-section (Stuart 188?) (2=0 & 2); wall fragments (3=0 & 3).
- 12 *Idem.* Native ware, sherds of at least five pots: bottom-lower wall (4=4); upper wall (2=2) and shoulder-rim (2=0 & 2); bottom-wall and wall-rim with handle, decorated with comb stabbing and fingernail impressions on rim (15=4+4+2+2 & 3); bottom-wall and wall-rim with handle, decorated with vertical impressions on upper wall and circular impressions, grooves and pits on shoulder (49=12+11+7+6+5×2 & 3).

From between rooms *w* and *x*:

6140 - 1951 - VIi - 0.20 ÷. Animal bones (according to find lists; not seen).

From room *x*:

- 13 6152 - 1951 - VIh - 0.20 ÷. Bronze coin, as:
Obv. C. CAESA [R DIVI AUG. PRON. AUG. P.M.TR.P.III(I?)] P.P.;
head of Caligula to the left.

Rev. [Vesta] — S.C.; Vesta veiled, sitting to the left with patera and sceptre. RIC Caligula 31 or 32.

Date: 40–41 AD (J. Gerritsen, in A. E. van Giffen, 1955, p. 171, nr. 36).

In all from almost 600 m²: iron socket (?) 1, bronze coin 1, numbers with bones 13, with shells 2, with iron slag 3, with half-burnt wood 1, with pebbles 1, with baked clay 1, lamp 1, varnished ware 1, Drag. 15/17 1, Drag. 18 ≥ 1, t.s. plate 1, Drag. 24/25g 1, Drag. 27k 1, Drag. 27 1, t.n. 1, Hofheim 50 (?) ≥ 2, cooking pots 3, amphorae 4, native ware 1.⁴⁶

Building 11 (29 × 40 m according to Glasbergen, 1967, p. 135) proves to be *two* buildings:

a. the heavily constructed rectangular courtyard-house discovered in cuttings VIh, i, j (southern part) and k; the uprights of this building are founded on horizontal sleeper beams; this building was almost certainly the commandant's quarters (Glasbergen, 1967, p. 46; construction details pp. 29–40);

b. the wall in cutting XI (Glasbergen, 1967, p. 46 and fig. 46: corner of commandant's quarters along intervallum opposite building 10) is, according to the field drawings, *not* founded on horizontal sleeper beams (*cf.* fig. 3); the foundation trench must therefore represent a separate building; in any event, the courtyard-house does not extend as far as the intervallum.

A remarkable fact is that this division of building 11 reminds one of the division of the principia, building 1, of which (*cf.* fig. 3) that part lying along the intervallum has likewise proved to be part of a separate building. The measurements of the commandant's quarters thus become 29 × approx. 30 m = approx. 870 m² (of which approx. 2/3 has been excavated); while the measurements of the true principia become 29 × 31 m = 900 m². Glasbergen (1967, pp. 147 and 150) gives 29 m for the fronts of both buildings.

The majority of the finds in the commandant's quarters consists of animal bones and broken 'ordinary' pottery. Most of the t.s. fragments and the only t.n. sherd were found in room *k*, next to a fire-place. Room *w* has a hearth mainly of native ware. Of a total of four amphorae, sherds were found in rooms *k*, *q* and *w* (two sherds), all of which have fire-places or hearths. The only coin was lost in room *x*. Though the number of finds, even in rooms *w* and *k* was small, the total distribution of the finds in the commandant's quarters suggests that rooms *w* and *k*—which both contain mobilia from several find categories (bones only in the wall between rooms *w* and *x*)—have a special function. Room *w* might be a special compartment for the commandant: it is exactly opposite the

⁴⁶ For the hearth in room *w* at least five pots were used.

entrance (*f*) to his quarters, on the opposite side of the courtyard with the impluvium, behind corridor *t*. The function of room *k* appears to be connected with the layout of rooms *k-l-m-n-o-p*, accessible at the side of the courtyard through room *l* (threshold): walking straight through room *n* one reaches the large space *p*, which contains a hearth made of sherds. Rooms *k-l-m-n* are interconnected ($4 \times$ interrupted dividing wall with $1 \times$ threshold observed or drawn).

The finds in that half of the commandant's quarters which adjoins the *via principalis* show a different composition: they are mainly animal bones and 'ordinary' pottery (only one t.s.). Of the 15 finds, four are from pits in the floor. A striking fact is that nothing was found in room *i*, which is taller, more solidly constructed and openly connected with the central court *j*.

The scarcity of finds in the eastern half of building 11 and in the area next to the corridor between buildings 11 and 12 (with entrance *f*) is remarkable. The distribution of the finds is ample confirmation for Glasbergen's supposition (1967, p. 46) that the floors of the commandant's quarters were swept regularly; here there are no large quantities of broken pottery trodden into the floor as in the men's quarters.

It is noticeable that more finds were registered in adaptation phase 1a than in castellum 1. In the commandant's quarters level 0.00 is the old surface of adaptation phase 1a (Glasbergen, 1967, pp. 24–26). Now, after renewed study of the stratigraphical allocations based on field drawings, 14 find numbers originally thought to belong to castellum 1, have been allocated to adaptation phase 1a. These finds, together with 40 others already allocated to adaptation phase 1a by H. Praamstra, are distributed evenly over the whole of the commandant's quarters. The building remained standing during adaptation phase 1a from castellum 1 to castellum 2/3; almost certainly the floors of the building (still the commandant's quarters?) were not regularly swept during this period.

The t.s. from the commandant's quarters of castellum 1 is – apart from the Drag. 27 from room *w* – of the same manufacture which Glasbergen (*cf.* p. 31) regards as being characteristic of a short period in the production of the South Gaulish potteries.

APPENDIX 5

Castellum 1, significant mobilia (fig. 13, pl. 10–14).

Inscriptions

- 1 From building 11:
7269a – 1962 – VIk – 0.00.⁴⁷ Tabula cerata fragment with address on the exterior:
TIGIIRNI LO MIL/CHOR III GALLORII = Tigernilo mil(iti)/c(o)hor(tis) III Gallor(um) e(quitata) (J. E. Bogaers, in W. Glasbergen, 1967, pp. 70–74, fig. 31a–b). Found at 0.00 in foundation trench of 2/3, therefore dug out of 1 or 1a.
- 2 From intervallum 2/3:
2565 – 1942 – IIc/d – 0.00. Tabula cerata fragment with remains of an address on the exterior:
C III G ALLORVM = c(ohors) III Gallorum (Glasbergen, 1967, p. 74). Discovered in the zone outside the wall of 1, heightened with the extension of 2/3 in mind.
- 3 Tabula cerata fragment with an address on the outside, the second line of which reads:
ALBANO MIIDICO (Glasbergen, 1967, p. 67, fig. 29). Inventory slip missing, but almost certainly from 1.
- 4 3121 – 1942 – IIb' – 0.40–0.20 +.
Graffito JIMI > CLASSICI, on the shoulder of a jug. Discovered in the zone outside the wall of 1, heightened with the extension of 2/3 in mind.
- 4a From papilio contubernium 2⁴⁸ building 9:
3686 – 1943 – VI – 0.20 ÷.
Graffito T CASI, on the bottom of a Drag. 18, certainly not belonging to the typical terra sigillata of the castellum 1 period (see p. 31).
- 5 Bottom plank of a wooden cask (*Abies alba* Mill., silver fir; identification A. Voorrips) with inscription branded with two types of loose metal letters:
C CAE . AVG . GER
IVLIOR BALON
Complete? Inventory slip missing, but almost certainly from 1.
- 6 Fragment of a leather shield or shield cover with graffito:
IIQVNIVS = Eq(ues) Iunius (Groenman-van Waateringe, 1967, pp. 24, 54, fig. 4 above, fig. 9: 5). Inventory slip missing, but almost certainly from 1.

⁴⁷ In order of: find number – year of excavation – cutting – depth below N.A.P. (=Normaal Amsterdams Peil: Dutch Ordnance Datum).

⁴⁸ Numbered from west to east.

Bow

- 7 From road between contubernium 1 of building 5 and the principia: 1543 - 1942 - IIa - 0.00-0.20 ÷. Fragment with a pointed end of a bone bow component. Identification I. A. Richmond during visit to B.A.I. See *Appendix 6*: 2. (Werner, 1932, Abb. 1, 2, 10; Macdonald, 1934, especially pp. 282-285, fig. 39.)

Belt-plates and buckles

- 8 From building 1:
701 - 1941 - I - 0.15 ÷ (Van Giffen, 1948, p. 186, pl. 13). Bronze ⁴⁹ inlaid belt-plate, type 2,⁵⁰ with decorations ⁵¹ 1a, 2a, 3 and 4; 4.5 × 2.2 cm.

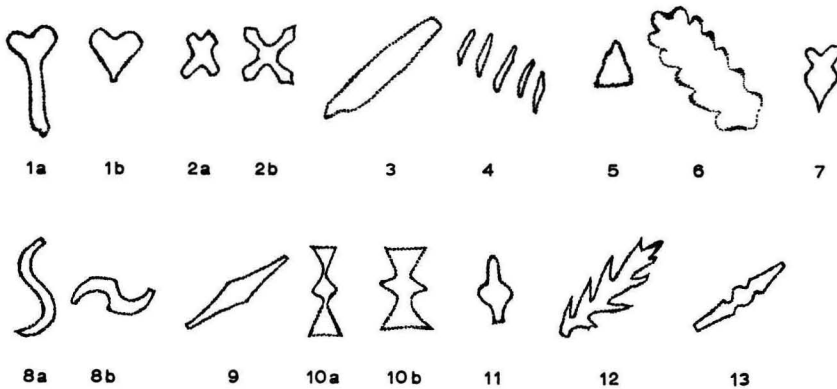


Fig. 13. Valkenburg Z.H., decorative motifs of belt-plates (2 : 1).

- 9 From fabricula building 5 (?):
1227 - 1942 - IIb - 0.18 + -0.00. Migrated upwards from 1 in 1a?
Bronze apron-mouth (end-plate), partly decorated; 4 × 1.3 cm; with three studs on the back.
- 10 From papilio contubernium 3 building 4:
1292 - 1942 - Id - 0.20 + -0.00. Migrated upwards from 1 in 1a?

⁴⁹ The indications bronze and iron are based on observations and not on metal analysis.

⁵⁰ Types of bronze belt-plates:

- 1a. flat, undecorated belt-plates
- 1b. idem, with one edge turned over
2. flat, inlaid belt-plates
3. belt-plates with boss and decoration (for inlay?)
4. repoussé belt-plates with turned-over edges
5. belt-plates with turned-over edges and high boss
6. idem with extremely small boss or without boss
7. inlaid belt-plates with turned-over edges.

⁵¹ For the decorative motifs on flat, inlaid belt-plates see fig. 13.

- Fragmentary bronze belt-plate, type 2, with decorations 2 (?) and 5; 5.6 × 2.7 cm; with part of hinge and buckle.
- 11 1295 - 1942 - Id - 0.20 ± 0.00. Migrated upwards from 1 in 1a? Cf. *Appendix 7*: 6. Bronze belt-plate, type 6, with decoration (possibly keying for inlay?); 4.8 (3.9) × [4.7]⁵² cm.
- 12 From building 1:
1547 - 1942 - I' - 0.20 ÷. Bronze belt-plate, type 5; 5 × 4.5 (3.4) cm.
- 13 From papilio contubernium 2 building 2:
2222 - 1942 - IIe - 0.00. Bronze belt-plate, type 6; 4.5 × 4.3 (3.5) cm.
- 14 From centurion's quarters building 4:
2302 - 1942 - IIb - 0.00-0.20 ÷. Bronze belt-plate, type 4; [4.3] × [4.6] (4) cm (see *Appendix 2*: 12).
- 15 From intervallum W of building 4:
2815 - 1942 - IIb - 0.30 ÷. Bronze belt-plate, type 4; 3.8 × 3.3 cm; for decoration cf. Lehner, 1904, Taf. XXXB: 57; Brailsford, 1962, fig. 4: A116.⁵³
- 16 From centurion's quarters building 2:
3180 - 1942 - IIe - until 0.80 ÷. Bronze belt-plate, type 6; 4.8 × 4 cm.
- 17 From papilio contubernium 3 building 9:
3642 - 1943 - VI - 0.00. Bronze belt-plate, type 3; 6.9 × 4.0 cm; identical with 34.
- 18 *Idem*. Bronze belt-plate, type 1b; 4.9 × 2.6 cm.
- 19 From arma contubernium 3 building 9:
3659 - 1943 - VI - 0.00-0.20 ÷. Bronze belt-plate, type 2, with decorations 8a and 10a; 4.9 × 2.9 cm; cf. Ritterling, 1913, p. 149, Abb. 27.
- 20 3666 - 1943 - VI - 0.00-0.20 ÷. Fragmentary bronze belt-plate, type 5; 4.7 × 3.4 cm.
- 21 From papilio contubernium 4 building 9:
3689 - 1943 - VI - 0.20 ÷. Bronze belt-plate, type 2, with decorations 8a, 9 and 10b; 5.2 × 3.1 cm.
- 22 From arma (?) contubernium 2 building 8:
3899 - 1943 - VI - 0.00. Bronze belt-plate, type 2, with decorations 1b, 11 and 12; 4.2 × 2.3 cm.
- 23 From wooden foundation of wall S of building 9:
4080 - 1943 - VI - 0.40 ÷. Bronze apron-plate, inlaid with niello; 2.7 × 1.2 cm; cf. Webster, 1958, fig. 5: 119.
- 24 From papilio contubernium 2 building 9:
4129 - 1943 - VI - 0.20 ÷. Bronze belt-plate (?) with hinge and buckle; for buckle cf. Ritterling, 1913, Taf. XI: 14; Brailsford, 1962, fig. 4: A91.
- 25 From foundation trench castellum 5; originally from building 9 (?):
4137 - 1943 - VI - ± 0.20 ±. Bronze belt-plate, type 2, with decorations 8a, 10b and 13; 5.3 × 3.1 cm.

⁵² [] = exact measurements not determinable due to wear.

⁵³ Only exact parallels will be mentioned.

- 26 From arma (?) contubernium 5 building 8:
4173 - 1943 - VI - 0.40 ÷. Bronze belt-plate, type 5, with decoration around boss; 5.2 × 3.1 cm; for decoration *cf.* Ulbert, 1969, Taf. 27: 10; Ulbert, 1970, Taf. 1: 4, Taf. 37: 4.
- 27 From arma contubernium 5 building 9:
4184 - 1943 - VI - 0.40 ÷. Iron belt-plate, type 7; 5.4 × 4.4 cm; with hinge and buckle.
- 28 From spatium conversantibus between contubernia 2 of buildings 8 and 9:
4225 - 1946 - VIb - 0.00. Bronze belt-plate, type 1; 4.9 × 3.2 cm; with hinge.
- 29 From arma contubernium 3 building 8:
4250 - 1946 - VIb - 0.20 ÷. Bronze belt-plate, type 2, with decorations 1a and 4; 5.2 × 3.0 cm; with extra hole in centre.
- 30 From spatium conversantibus 8/9:
4367 - 1948 - VIc/d - 0.00. Bronze belt-plate, type 6; 5.4 × 4.2 (3.4) cm.
- 31 From intervallum S of building 9:
4727 - 1948 - VIc/d - 0.20 ÷. Bronze buckle and part of hinge; *cf.* 24.
- 32 From papilio contubernium 1 building 8:
5071 - 1950 - VIg - 0.00. Bronze belt-plate, type 5; 5.3 × 4.1 cm.
- 33 *Idem.* Bronze belt-plate, type 5, with applied boss and decoration (possibly keying for inlay?); 5.4 × 4.4 cm.
- 34 From papilio contubernium 1 building 7:
5073 - 1950 - VIg - 0.00. Bronze belt-plate, type 3; 6.6 × 4.0 cm; identical with 17.
- 35 From papilio contubernium 5 building 8:
5080 - 1950 - VIg - 0.00. Bronze belt-plate, type 1; 6.0 × 2.4 cm; with hinge.
- 36 From papilio contubernium 2 building 7:
5085 - 1950 - VIg - 0.00. Bronze belt-plate, type 5; 4.6 × 3.9 cm.
- 37 From between buildings 7 and 8:
5087 - 1950 - VIg - 0.20 ÷. Bronze belt-plate, type 6; 5.0 × 3.5 cm; with hinge and buckle; for buckle *cf.* Brailsford, 1962, fig. 4: A78.
- 38 From papilio contubernium 4 building 8:
5088 - 1950 - VIg - 0.20 ÷. Part of bronze belt-plate, type 1 (?); with hinge and buckle.
- 39 From papilio contubernium 2 building 7:
5089 - 1950 - VIg - 0.20 ÷. Bronze belt-plate, type 6; 5.6 × 5.0 (4.2) cm; with hinge and buckle.
- 40 From papilio contubernium 7 building 7:
5092 - 1950 - VIg - 0.20 ÷ - 0.40 ÷. Bronze belt-plate, type 1; 4.2 × 2.1 cm.
- 41 From between buildings 7 and 8:
6041 - 1950 - VIg - 0.20 ÷. Bronze belt-plate, type 6; 4.9 × 3.4 cm; with hinge.

Belt-plates from unknown stratigraphical context.

- 42 1015⁵⁴ - 1942 - Ib - $\pm 1.20 +$. Bronze belt-plate, type 2, with decorations 2a and 8b; 4.7×1.9 cm.
- 43 From outside castellum:
1635 - 1942 - XIa - $1.10 \div$. Bronze belt-plate, type 1; 5.5×3.3 cm; with hinge and buckle; disk, with decoration 7, riveted to the apex.
- 44 1782 - 1942 - IIc/d' - $0.80 \div - 1.00 \div$. Bronze belt-plate, type 2, with decorations 1b, 5 and 6, 4.3×2.5 cm.
- 45 From outside the wall of castellum 1:
2320 - 1942 - IIb - $0.00 - 0.20 \div$. Bronze buckle; cf. Brailsford, 1962, fig. 4: A93.
- 46 5068 - 1950 - VIg - $0.40 +$. Bronze belt-plate, type 6; 4.6×4.1 cm.
- 47 *Stray find*. Bronze belt-plate, type 1; 4.6×2.9 cm; with hinge.

Horse (?) armour

- 48 From papilio contubernium 1 building 5:
1576 - 1942 - IIa - $0.20 \div$. Bronze harness fitting, ring with four links for attaching straps.
- 49 From intervallum W of building 5:
1593 - 1942 - IIb - $0.25 \div$. Bronze harness trapping, severely buckled disk pendant; cf. Ritterling, 1913, Taf. XIV: 4; Brailsford, 1962, fig. 3: A40; knob on bottom missing.
- 50 From fabricula building 5:
1659 - 1942 - IIa - $0.00 - 0.20 \div$. Bronze harness trapping, phallic pendant; ring on top missing.
- 51 From southernmost foundation trench contubernium 7 building 8:
4257 - 1946 - VIb - $0.40 \div$. Bronze ring.
- 52 From papilio contubernium 3 building 7:
5090 - 1950 - VIg - $0.20 \div$. Bronze harness trapping, double disk pendant; cf. 49.
- 53 *Idem*. Bronze phalera.
- 54 *Idem*. Bronze barnacles; parallels found at Weissenburg (Fabricius, 1906, Taf. X: 47), at Zugmantel (Jacobi, 1909, Taf. XII: 91a, b, 106 and Taf. XXV) and at Hofheim (Ritterling, 1913, pp. 168-169, Taf. XIX: 26, 31, 36, 37, 39).

Comparable pieces to the inlaid belt-plates are to be found — as far as they are datable — only in Claudian-Neronian context. It is remarkable that virtually no wholly identical plates have been found. The decorative motifs may be the same, but are in every case arranged differently.

⁵⁴ Probably 1014, according to find lists:
(1014 - 1942 - Ib - . . .) piece of bronze just above the beams of the road. Probably at about 0.00, because 1013 is found at $0.05 \div$ and indicated as *terra sigillata* 'tussen weg' ('between road') [*i.e.* between the beams of the road].

Numbers 17 and 34 are so far the only two plates to be identical in shape and decoration. Their width is also the same (4.0 cm). However, they were found in buildings 7 and 9 at a depth of 0.00. If we assume that this represents the levelling for 1a, in which material from 1 has become dispersed, these belt-plates may very well have come from one cingulum. The two type 4 belt-plates, it is true, were found close together (in the centurion's quarters of building 4 and in the intervallum west of building 4), but their widths differ considerably (4 cm as opposed to 3.3 cm), so that they presumably come from two different belts.

Types 5 and 6 appear to have more parallels, also in Flavian context, but examination reveals small differences, either in shape or in decoration or size. The same applies to the horse armour, though such types as the double disk or the roughly heart-shaped pendants and phallic amulets occur quite often in first century contexts, but nearly always slightly different in shape, size and decoration. Might this argue for local production on the basis of generally familiar types?

The making of a firm statement regarding the significance of the distribution of belt-plates and horse armour would, in view of the small number of finds, be a somewhat risky undertaking.

Comparable pieces are to be found in Hod Hill (Brailsford, 1962), Camulodunum (Hawkes & Hull, 1947), Richborough (Henderson, 1949; Wilson, 1968), finds from various English sites are described by Webster (1958), Vindonissa (Fellmann, 1954; Wiedemer, 1963), Baden-Aquae Helveticae (Unz, 1972), Aislingen and Burghöfe (Ulbert, 1959), Rheingönheim (Ulbert, 1969), Risttissen (Ulbert, 1970), Mainz (Behrens, 1912; 1917-1918), Novaesium (Lehner, 1904), Haltern (Ritterling, 1901) and elsewhere.

APPENDIX 6

Castellum 2/3, significant mobilia (fig. 14, pl. 15).

Inscription

- 1 From westernmost (except one?) contubernium building 4:
1056 - 1942 - Ib - 0.83 +. Graffito TVRMA IVLI[on the outer face of a large fragment of a mortarium with a horizontal rim. From burnt layer covering 2/3.

Bow

- 2 From NE room of officer's quarters building 4:
1746 - 1942 - IIb - 0.40 + (still 1a, perhaps?). Bone bow component with a semicircular notch for the attachment of the bow string. For identification see *Appendix 5* : 7.

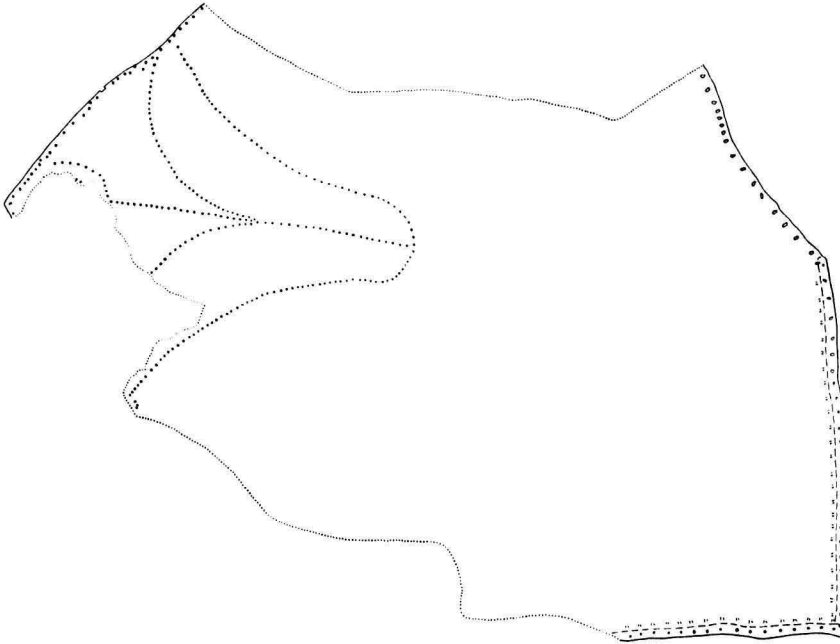


Fig. 14. Valkenburg Z.H. 2/3, fragment of leather horse trapping (1 : 4).

Horse (?) armour

- 3 From road between buildings 1 and 5:
673 - 1941 - I - 0.35 +. Bronze harness trapping, phallic pendant.
- 4 From arma (?) contubernium 3 building 3:
1141 - 1942 - Id - 0.40 +. Bronze ring with indications of wear at opposite points; cf. Ritterling, 1913, Taf. XIII: 41.
- 5 From building 1:
1612 - 1942 - I' - 0.40 +. Bronze harness trapping, phallic pendant.
- 6 From centurion's quarters building 3:
2453 - 1942 - IIc/d - 0.60 +. Bronze harness trapping, disk pendant, partly damaged.
- 7 From building 13:
2796 - 1942 - If - 0.40 +. Leather horse trapping (Groenman-van Waateringe, 1967, p. 108, fig. 36) (fig. 14).
- 8 From building 13:
3752 - 1943 - Ig - 0.10 ÷ - 0.40 +. Bronze bell.
- 9 From intervallum 2/3 outside the wall of 1:
4875 - 1948 - VI d - 0.20 +. Bronze harness trapping, phallic pendant.
- 10 Find number not on field drawings but probably from 0.80 +:
4438 - 1943 - VIc/d - . . . Fragmentary bronze side-plate from bridle-bit.

APPENDIX 7

Adaptation phase 1a, significant mobilia (fig. 15, pl. 16).

Horse (?) armour

- 1 From arma contubernium 4 building 4:
1166 - 1942 - Id - 0.20+. Bronze headstall.
- 2 From arma contubernium 2 (?) building 4:
1170 - 1942 - Id - 0.20+. Bronze ring; *cf.* Ritterling, 1913, Taf. XIII : 8.
- 3 From intervallum W of building 5:
1240 - 1942 - IIa - 0.18+-0.00. Leather saddle (Groenman-van Waateringe, 1967, p. 106, fig. 35; 39) (fig. 15).
- 4 From arma contubernium 4 building 3:
1276 - 1942 - Id - 0.20+-0.00. Bronze harness trapping, pendant, with keying for inlay?
- 5 From arma contubernium 3 building 3:
1293 - 1942 - Id - 0.20+-0.00. Bronze barnacles; *cf.* *Appendix 5* : 54.
- 6 From papilio contubernium 4 building 3:
1295 - 1942 - Id - 0.20+-0.00. Bronze harness trapping, double disk pendant; *cf.* Ritterling, 1913, Taf. XIV : 9, 10; Brailsford, 1962, fig. 3: A40.
- 7 From building 1:
1602 - 1942 - I' - 0.10. Bronze bell, severely damaged.
- 8 From intervallum S of building 9:
4035 - 1943 - VI - 0.20+. Bronze pendant with punched ornamentation.

Horse (?) armour

Stray finds but certainly belonging to castella 1 or 2/3 or adaptation phase 1a:

- 1 2296 - 1942 - IIc/d. Fragmentary bronze harness trapping, disk pendant.
- 2 2717 - 1942. Bronze side-plate from bridle-bit; *cf.* Brailsford, 1962, fig. 2: A25-27; Ritterling, 1913, Abb. 34; Taf. XIX: 1.
- 3 Bronze harness trapping, double disk pendant.
- 4 Fragmentary bronze side-plate from bridle-bit; *cf.* stray finds 2, nr. 2717.

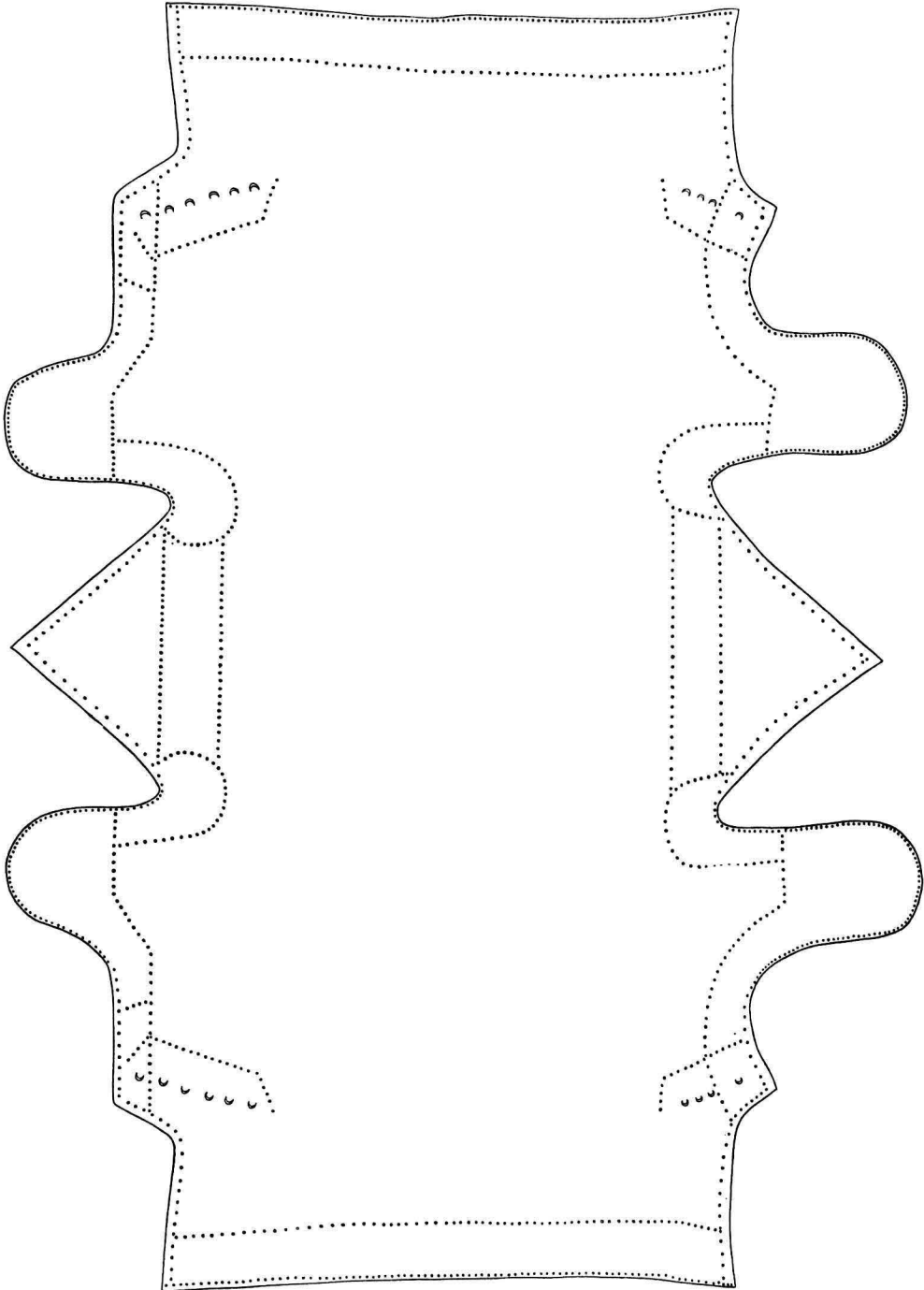


Fig. 15. Valkenburg Z.H. 1a, reconstruction of a leather saddle (1 : 4).

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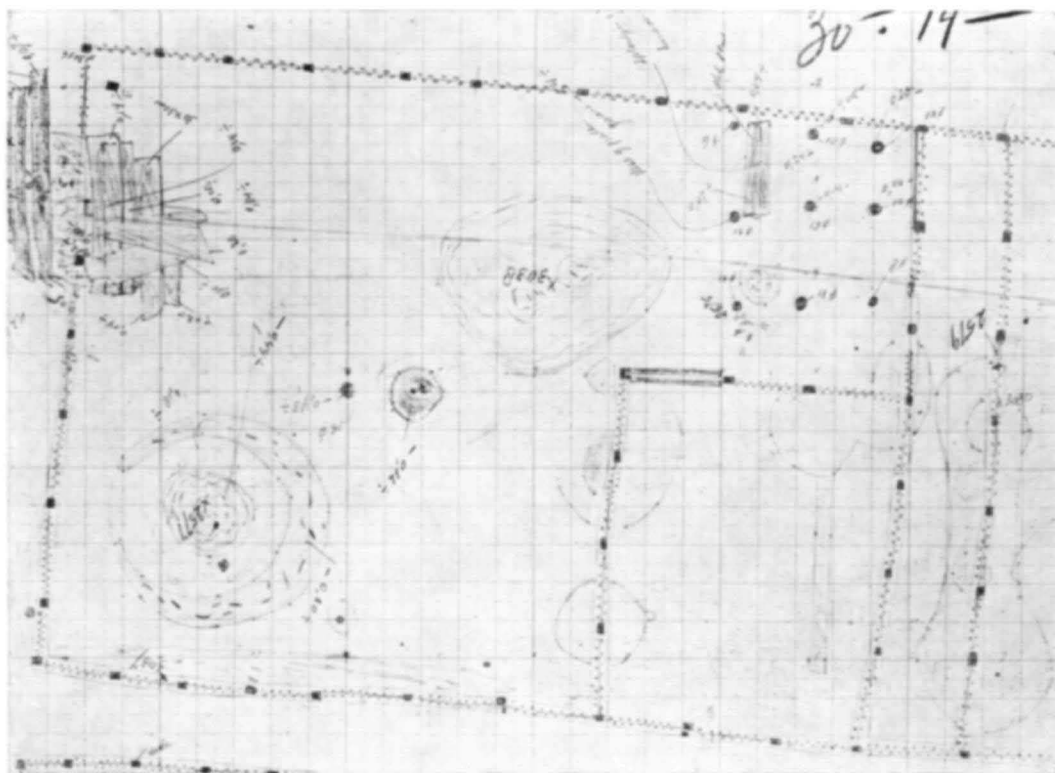
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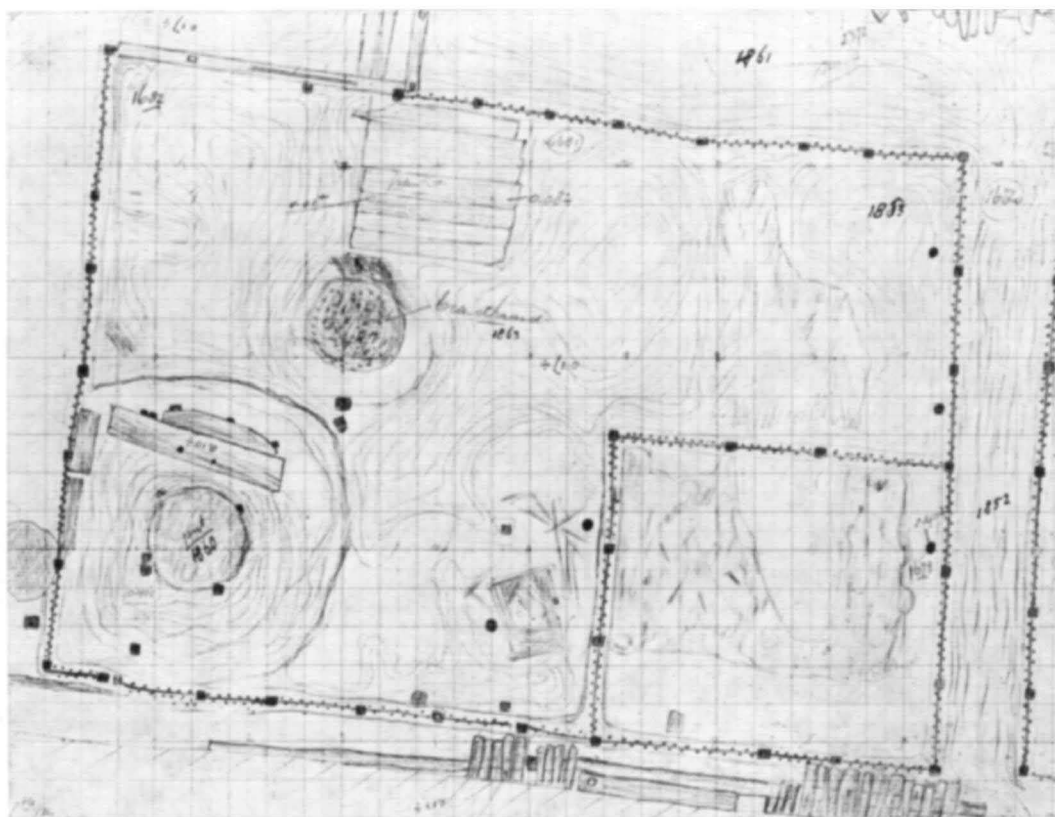
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PLATE 1



Valkenburg Z.H. 1, building 3, fabricula, with fire-pit in the centre, a setting of posts three rows by three in the north-east corner, a treadmill in the south-west corner (centimeter grid, $2\frac{1}{2}$ cm=1 m).

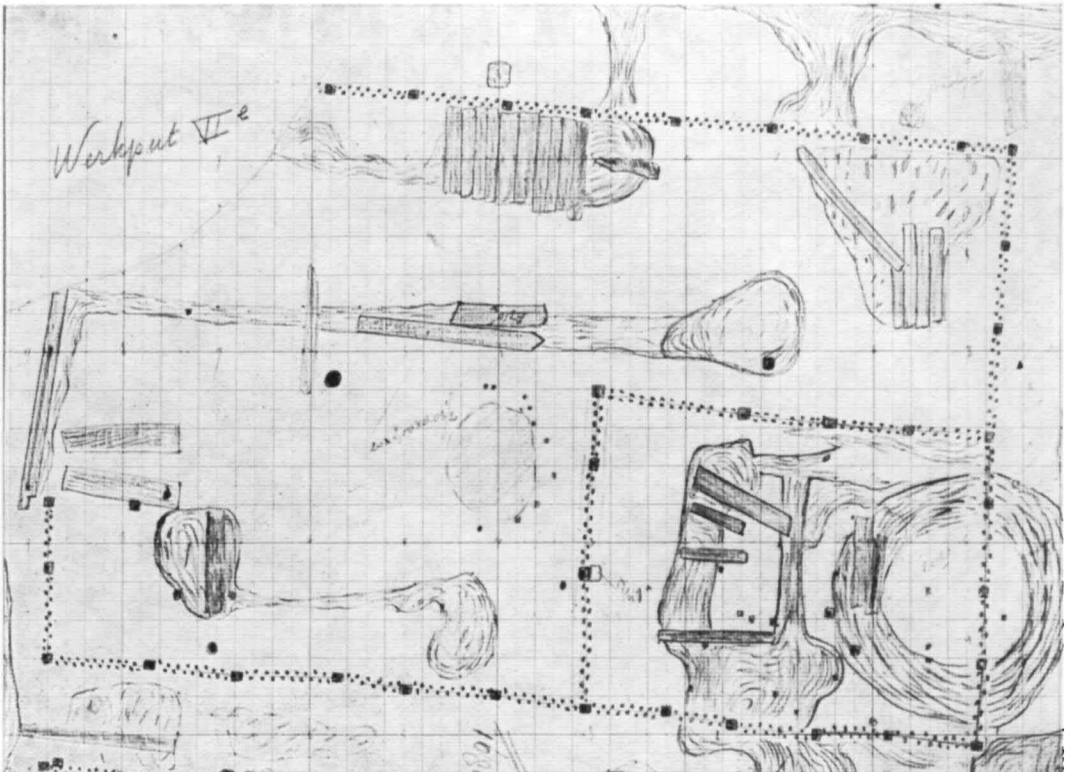


Valkenburg Z.H. 1, building 5, fabricula, with fire-pit in the centre, planking against the north wall, a treadmill in the south-west corner ($2\frac{1}{2}$ cm=1 m).

PLATE 2



Valkenburg Z.H. 2/3, treadmill in the intervallum west of the porta principalis dextra.



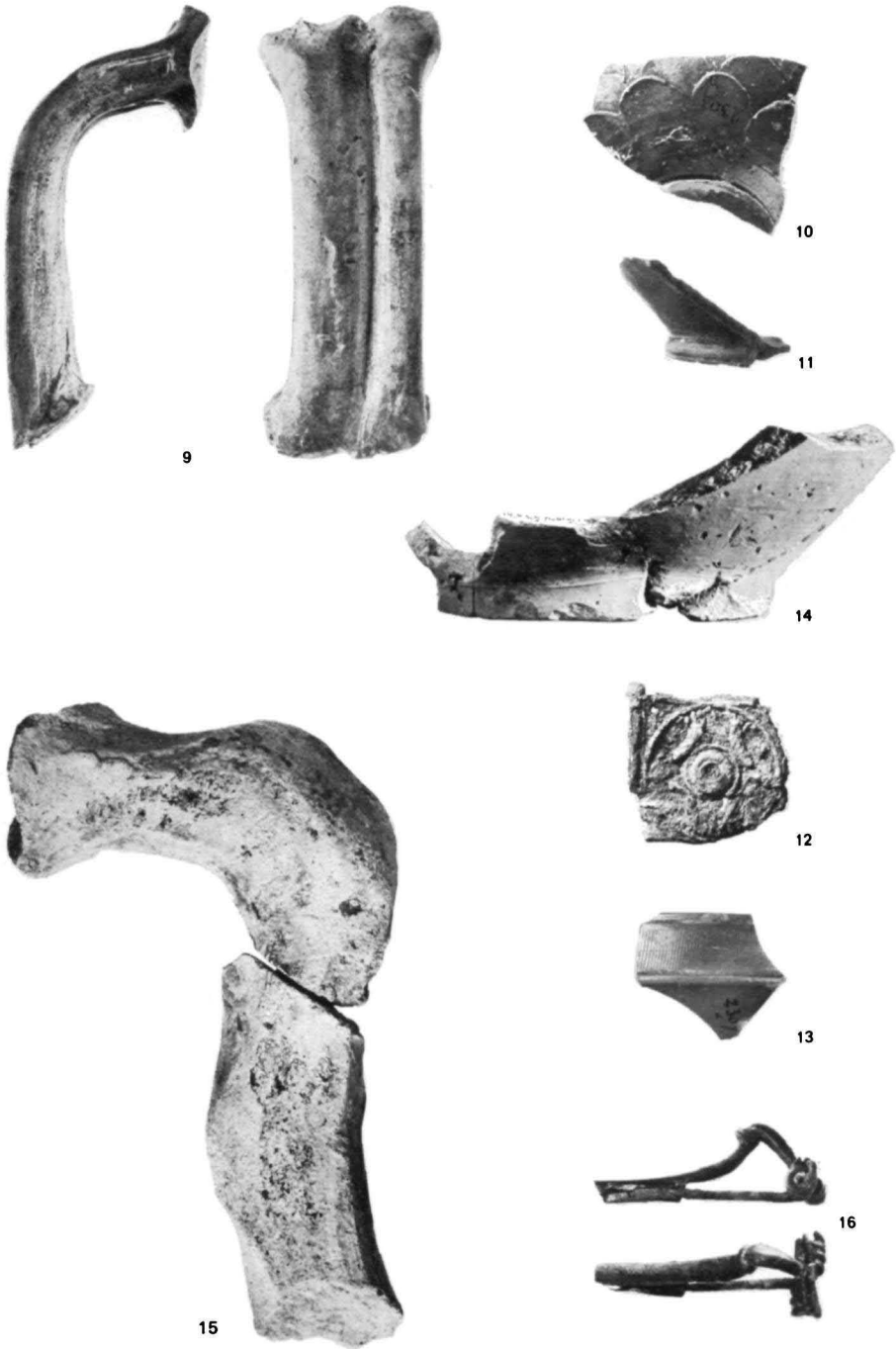
Valkenburg Z.H. 1, building 7, fabricula, with planking against the north wall, a treadmill cut by the eastern wall ($2\frac{1}{2}$ cm=1 m).

PLATE 3



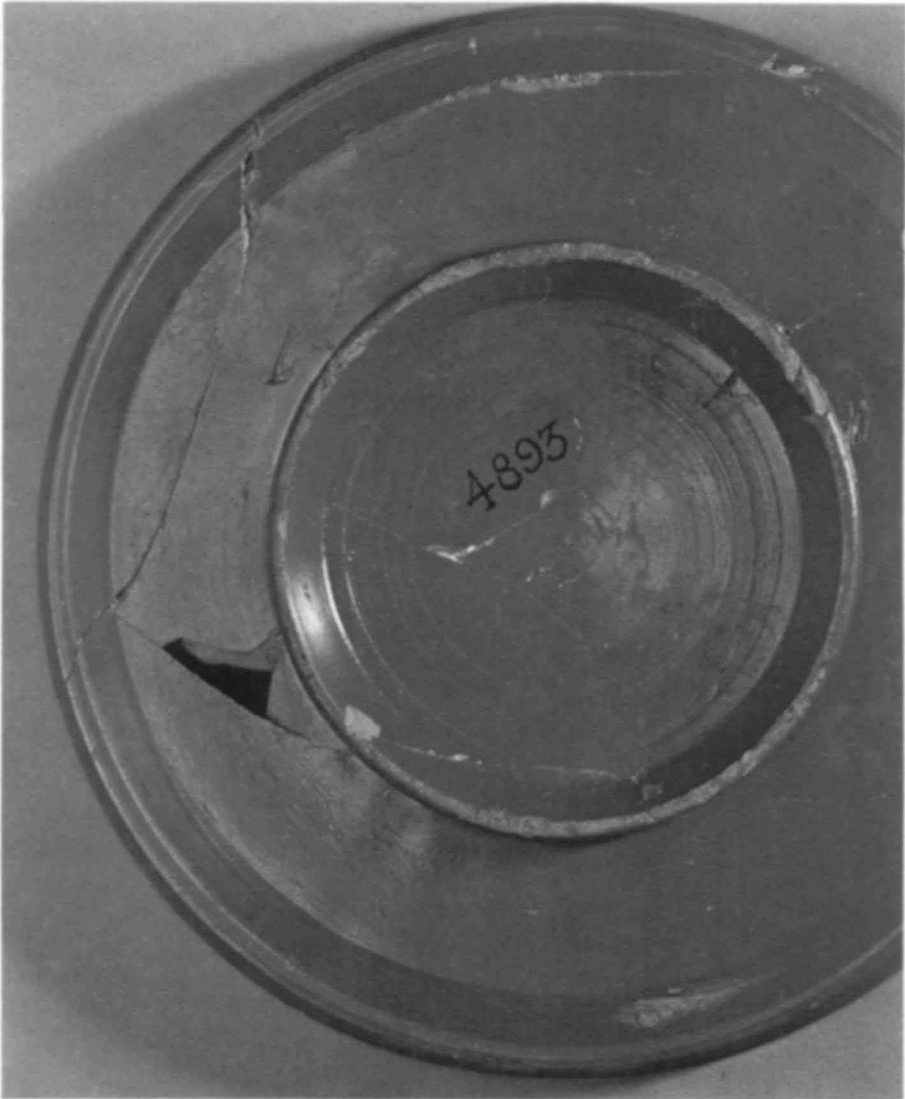
Valkenburg Z.H. 1, building 4, centurion's quarters, mobilia (1 : 2, t.s. stamp 1 : 1, sword scabbard approx. 1 : 3).

PLATE 4



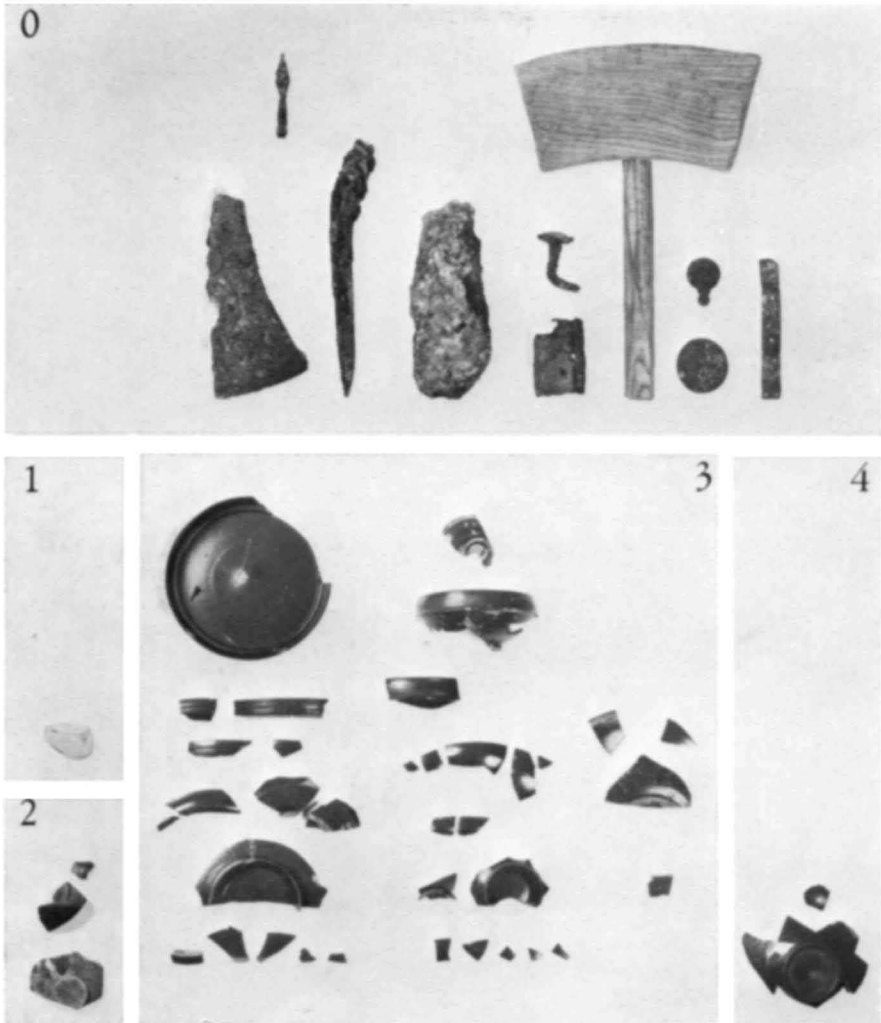
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PLATE 5



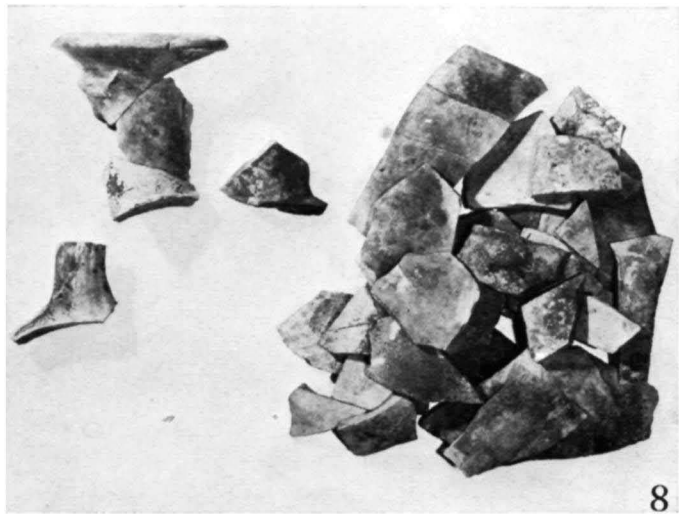
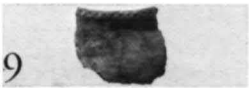
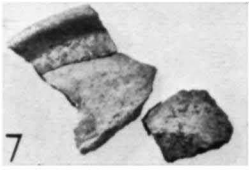
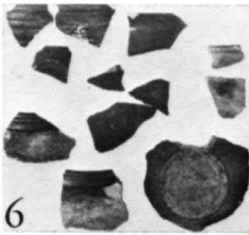
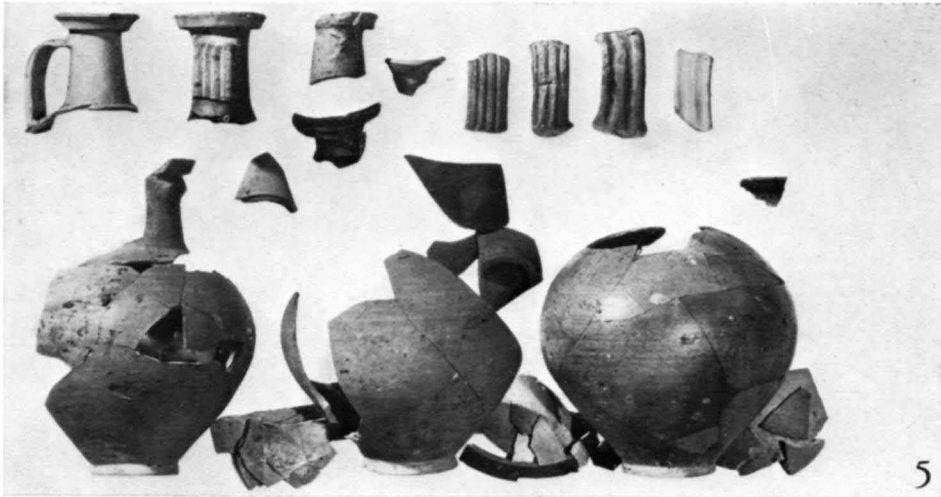
Valkenburg Z.H. 1, specimen of terra sigillata (Drag. 15/17: see p. 29, 4893) produced in Southern Gaul between 35 and 45 AD (diameter 17.2 cm).

PLATE 6



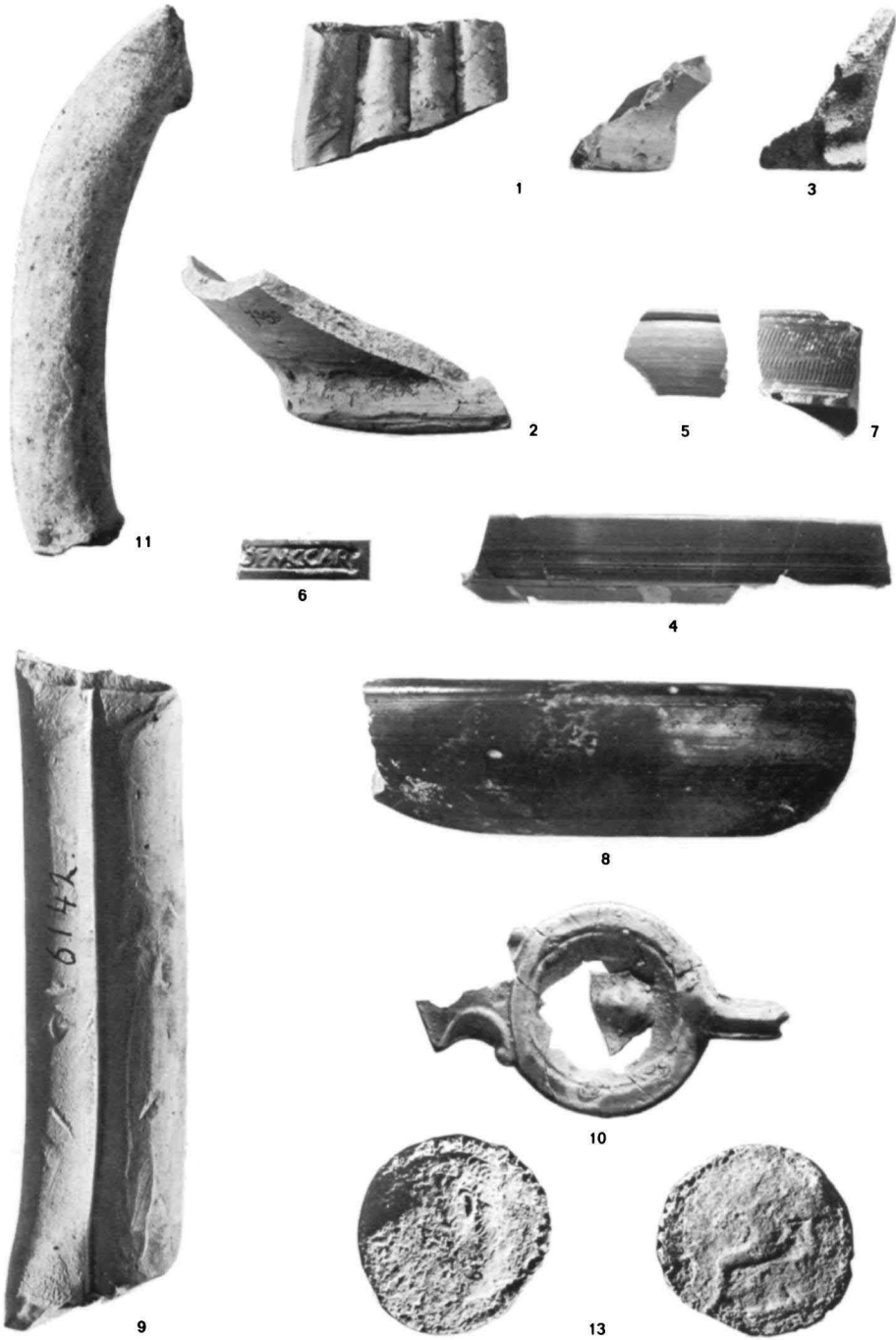
Valkenburg Z.H. 1, building 9, fabricula, mobilia (1 : 8). For categories 0-4 see p. 29, note 42.

PLATE 7



Valkenburg Z.H. 1, building 9, fabricula, mobilia (1 : 8). For categories 5-9 see p. 29, note 42.

PLATE 8

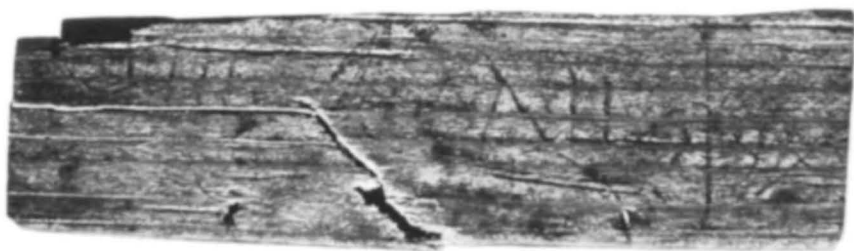


Valkenburg Z.H. 1, building 11, commandant's quarters, mobilia (1 : 2, t.s. stamp and coin 1 : 1).



Valkenburg Z.H. 1, building 11, commandant's quarters, native ware (1 : 3).

PLATE 10



Valkenburg Z.H. 1, tabulae ceratae and graffiti (length of tabulae ceratae resp. 13.35, 14.0 and 12.1 cm, graffiti 4 1 : 2, 4a 1 : 1).

PLATE 11



5



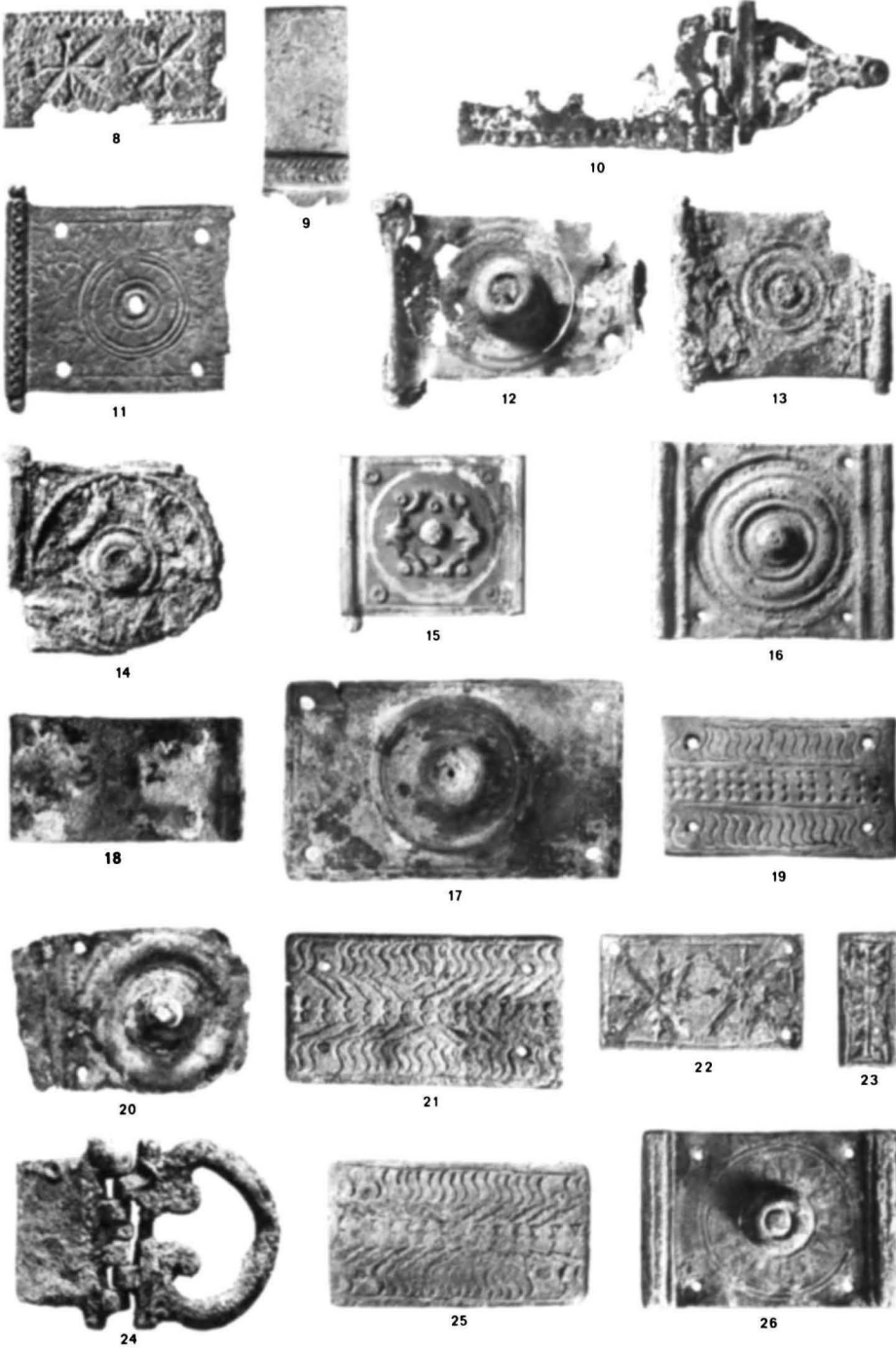
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6

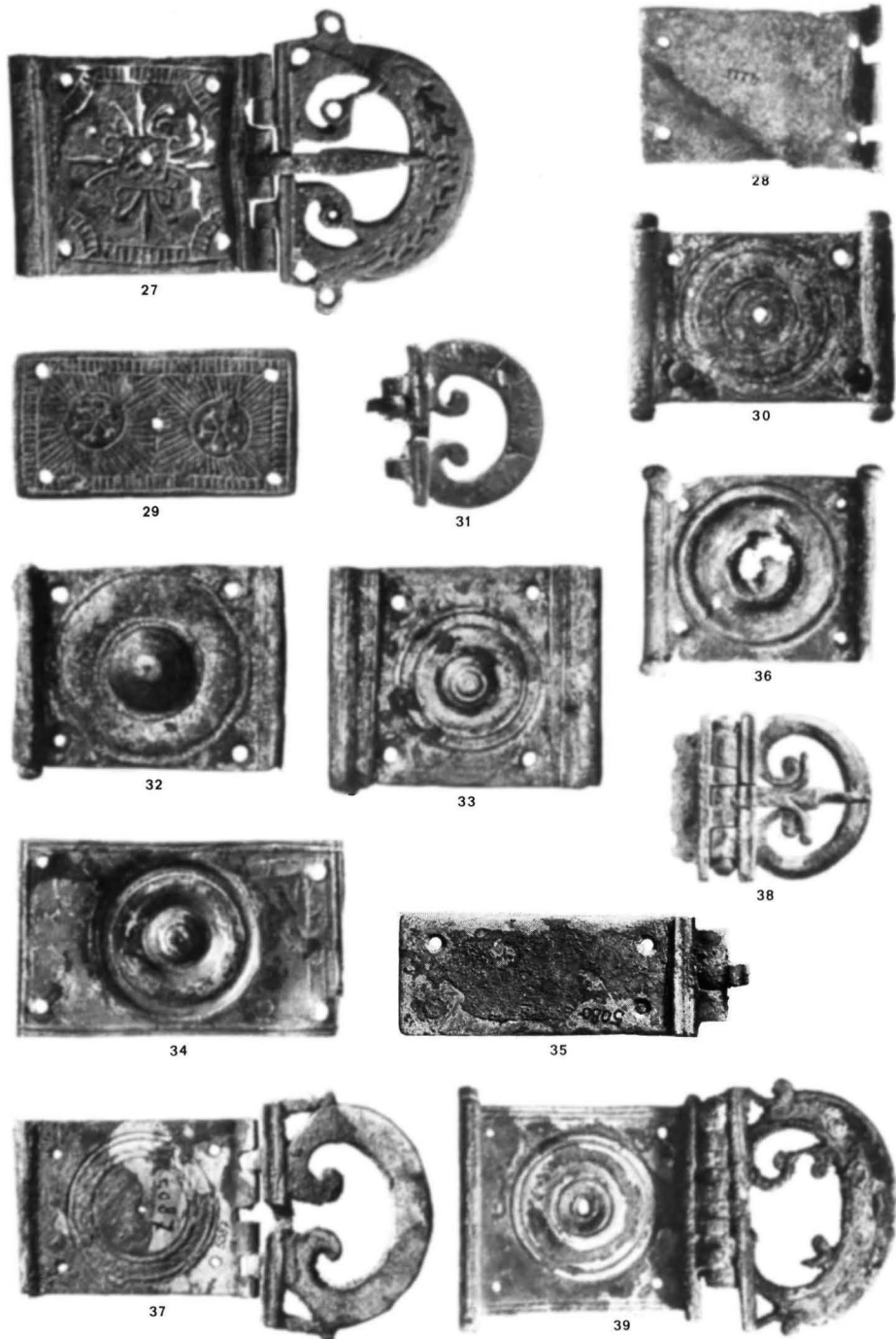
Valkenburg Z.H. 1, significant mobilia (1 : 2).

PLATE 12



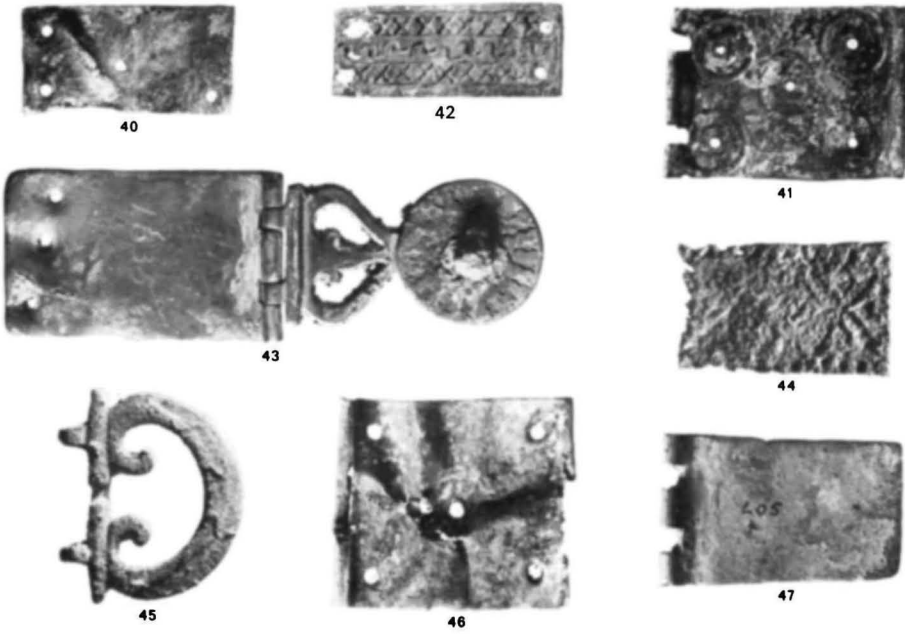
Valkenburg Z.H. 1, belt/apron plates and buckles (2 : 3).

PLATE 13

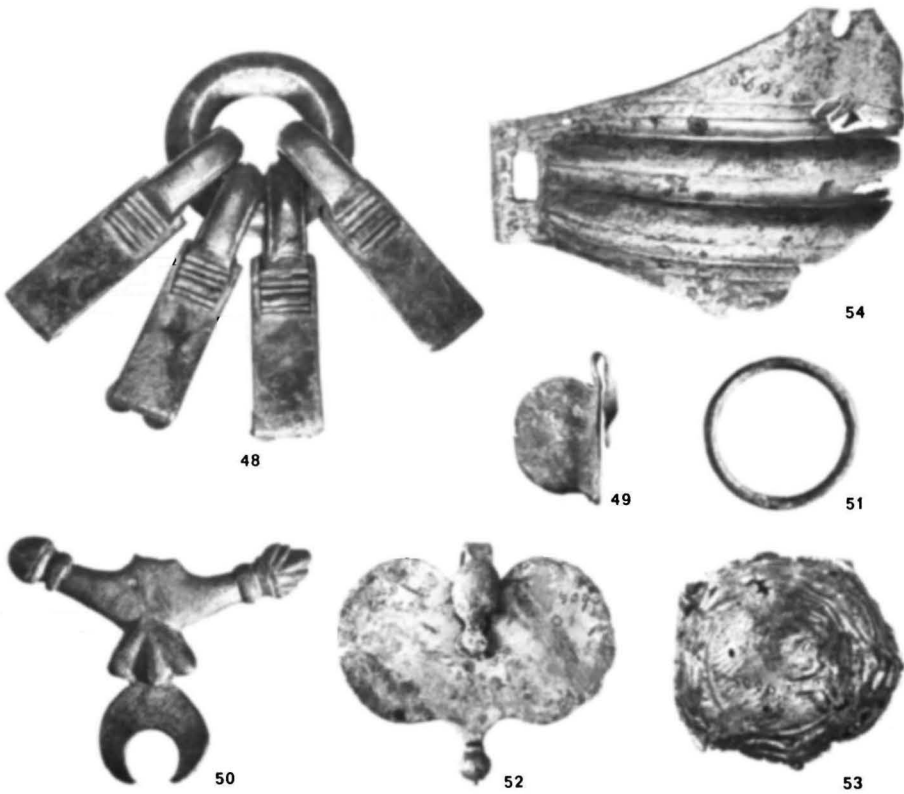


Valkenburg Z.H. 1, belt plates and buckles (2 : 3).

PLATE 14



Valkenburg Z.H. 1, belt plates and buckles (2 : 3).



Valkenburg Z.H. 1, horse (?) armour (1 : 2).

PLATE 15



1



4



5



6



8



10



3



9



2

Valkenburg Z.H. 2/3, significant mobilia (1 : 2).

PLATE 16



Valkenburg Z.H. 1a, horse (?) armour; bottom 1-4: stray finds (1 : 2).