

I
The Eighth Horsley Memorial Lecture
Keeping watch over the *Limes*

D. Baatz

HOW did the Roman army actually keep watch over the *limes*? I shall try to give an idea how this might have been carried out along a specific section of the Roman *limes* in central Europe, the frontier of the province *Germania superior*. In the middle of the first century A.D. the frontier of the Empire ran along the rivers Rhine and Danube. A few decades later, during the Flavian period, the Roman army crossed the upper Rhine and incorporated a strip of land east of the river into the Empire. The intention was to acquire a sort of buffer zone in front of the legionary fortresses Mainz and Strasbourg, and also to achieve better communication from the Rhine to the Danube provinces. Certain problems with the adjacent Germanic tribes forced the Romans to build a frontier controlled by auxiliary units, the Upper German and the Raetian *Limites* (fig. 1)¹.

Under Trajan, the Upper German *Limes* went through the mountain forests of the Taunus around the Wetterau north of Frankfurt through the Odenwald forest down to the Neckar river, which served as a river *limes*. Further to south-east and east, over to Raetia, only some auxiliary forts had been erected until then to occupy the area. The *limes* was not yet drawn there. In this region the Roman territory was hardly endangered because of large forests in front of the province, the Welzheimer Wald and other wooded mountainous areas, which acted as a barrier against Germanic raids (fig. 2).

Only some decades later, in the mid-second century A.D., about A.D. 160, the Romans closed the gap and consolidated the *limes*. Now the line ran continuously from the Rhine along the border of the provinces *Germania superior* and Raetia to the Danube west of

Regensburg (fig. 3). The *limes* protected the provinces for one century more until about A.D. 260, when the Alamanni conquered the Roman territory up to the Rhine and Danube².

In south-western Germany the Roman army was confronted with a complicated, wooded landscape and an unfamiliar climate. Italians coming to the North liked neither the country nor the climate. Tacitus put this in the famous words: *Quis porro ... Italia relicta Germaniam peteret, informem terris, asperam caelo, tristem cultu aspectuque, nisi si patria sit?*—"Who wants to leave Italy and move to Germany—with its wild scenery and harsh climate it is pleasant neither to live in nor look upon unless it is to be one's home". And in another place: *Terra etsi aliquanto specie differt, in universum tamen aut silvis horrida aut paludibus foeda*—"There are some varieties in the appearance of the country, but broadly speaking it is a land of horrible forests and treacherous marshes"³.

In south-western Germany the typical low mountain ranges of the region are still today covered with forest: Westerwald, Taunus, Vogelsberg, Spessart, Odenwald, Schwarzwald, Welzheimer Wald and others. In antiquity, before mediaeval and modern clearing, the forests were much more extensive. They included only a comparatively small number of inhabited fertile plains. One of these plains was the Wetterau north of Frankfurt, geologically an extension of the Upper Rhine valley. The Romans occupied the Wetterau during the Flavian period. They built the *limes* around the plain just a little out of the open countryside at the edge of the forest. With the exception of the river *limites* along the Main and Neckar most sections of the Upper German *Limes* were built in the mountain forests

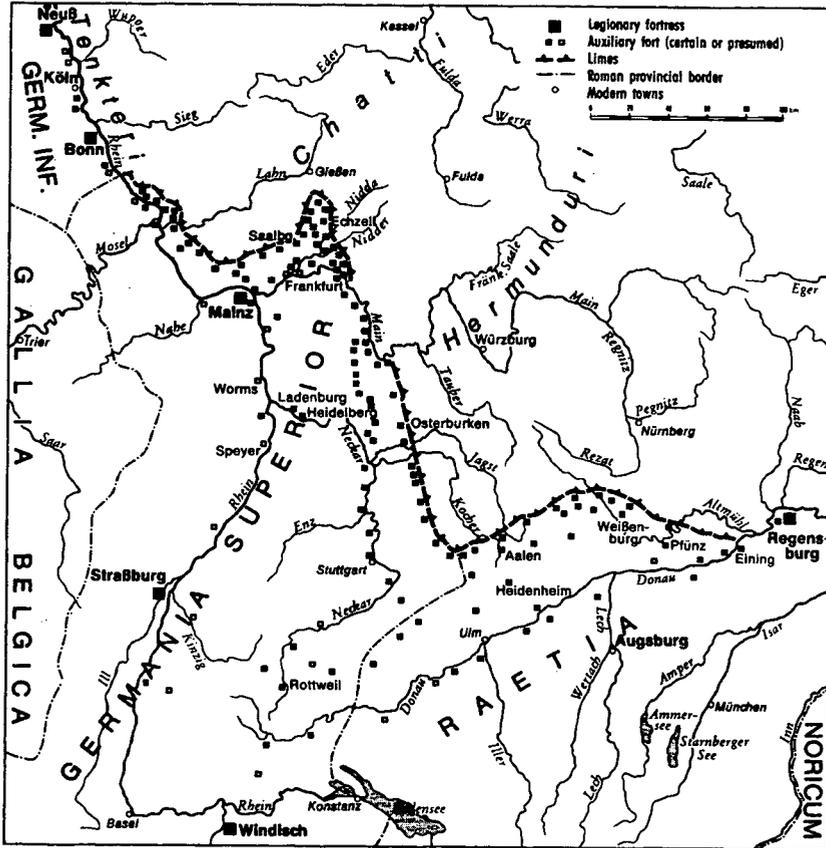


Fig. 1 Map showing the Roman frontier from the Rhine to the Danube. Building phases not distinguished.

outside the inhabited countryside. In the Taunus, for instance, the *limes* ran over a considerable length on top of the mountain crest. Marking out the *limes* this way, the Roman army avoided as far as possible contact with inhabited Germanic tribal territory. There were only two contact areas north of the Wetterau and south of the river Main, where Bauland and Hohenloher Ebene came up to the *limes*. But the tribes living there were comparatively small and unimportant (fig. 4). In contrast to the regions near the *limes* a dense

Germanic population is marked out around the middle course of the river Elbe about 200 km away. There originated the *Alamanni*, who in the third century A.D. overran the *limes* and attacked the Roman provinces. Another area of dense Germanic population far away from the Upper German *Limes* stands out in Bohemia (today part of the Czech Republic). Ancient *Boiohaemum* was the territory of the Marcomanni, who proved to be pertinacious enemies of the Empire during the reign of Marcus Aurelius.

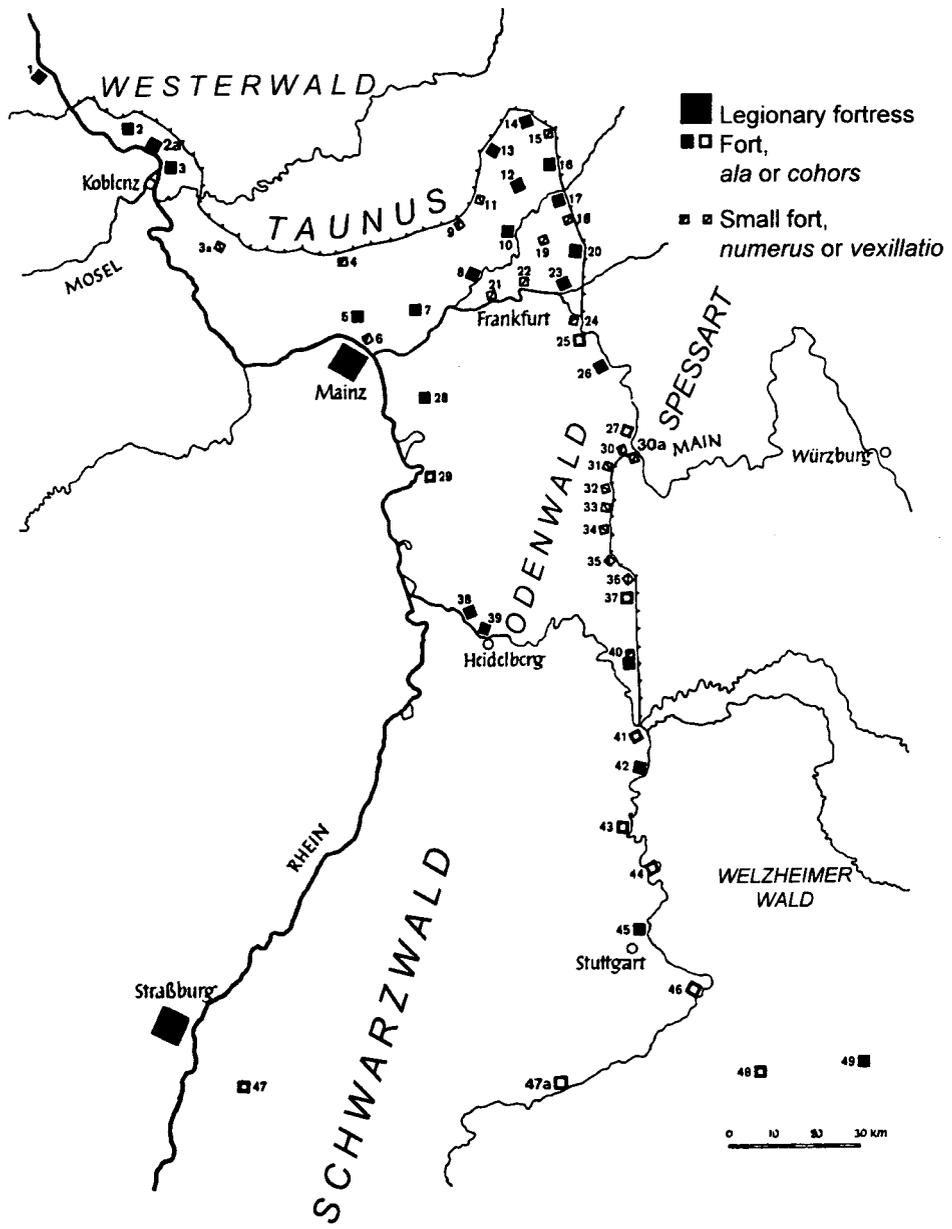


Fig. 2 Upper German Limes under Trajan.

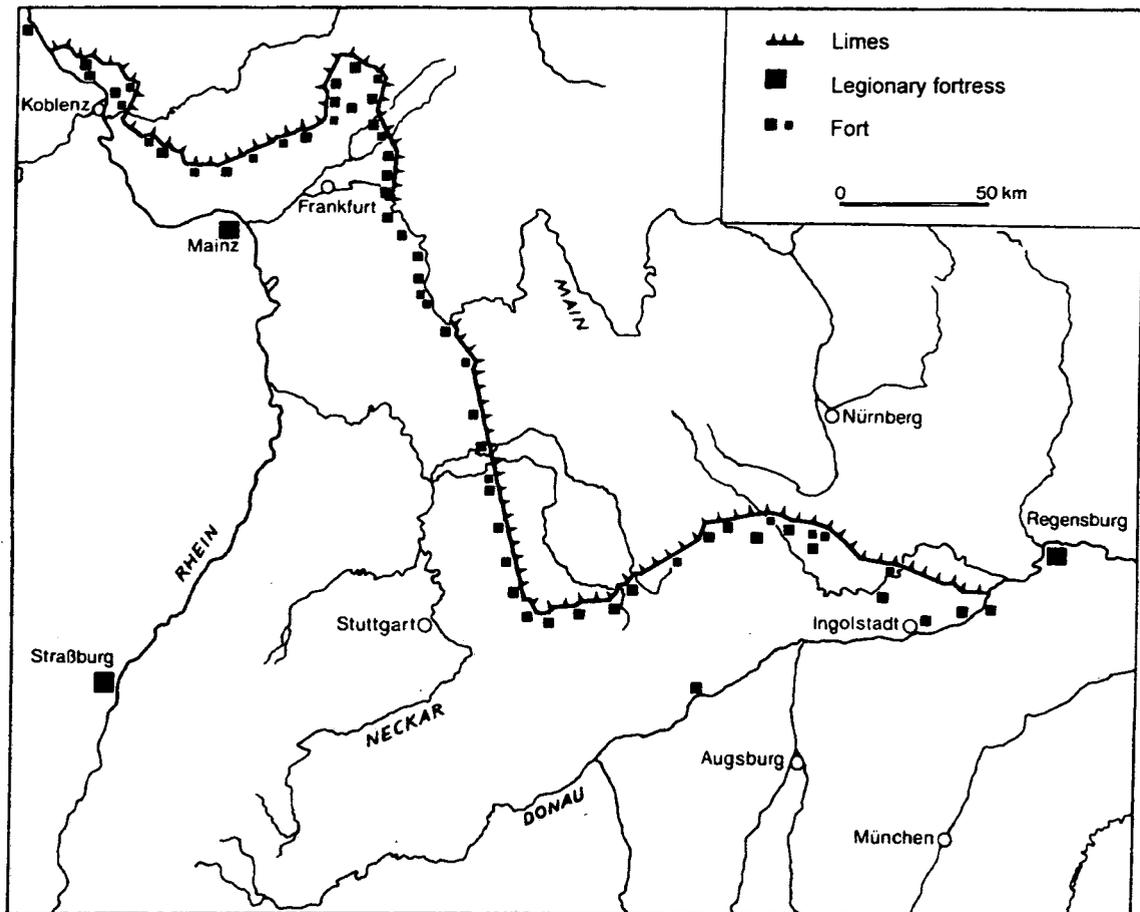


Fig. 3 Upper German and Raetian Limes at the beginning of the third century A.D.

Archaeological finds from the small Germanic territories adjacent to the *limes* include specific types of Roman import ware⁴. The Germanic neighbours of the province imported a larger proportion of everyday goods than the more remote Germans, where Roman luxury articles frequently have been found in the tombs of the aristocracy. Obviously the contact areas stimulated a small-scale trade over the frontier. This gives reason to assume that most of the time the tribes were

on friendly terms with the Romans. Probably they were *foederati*, being in a treaty with Rome.

We may conclude that the Romans intentionally minimized the pressure on the frontier by marking out the *limes* in a way to avoid tribal territory wherever possible. Diplomatic means were used to build up a system of treaties with the immediate Germanic neighbours, who were anyway hopelessly inferior to the well-equipped Roman force of the province.

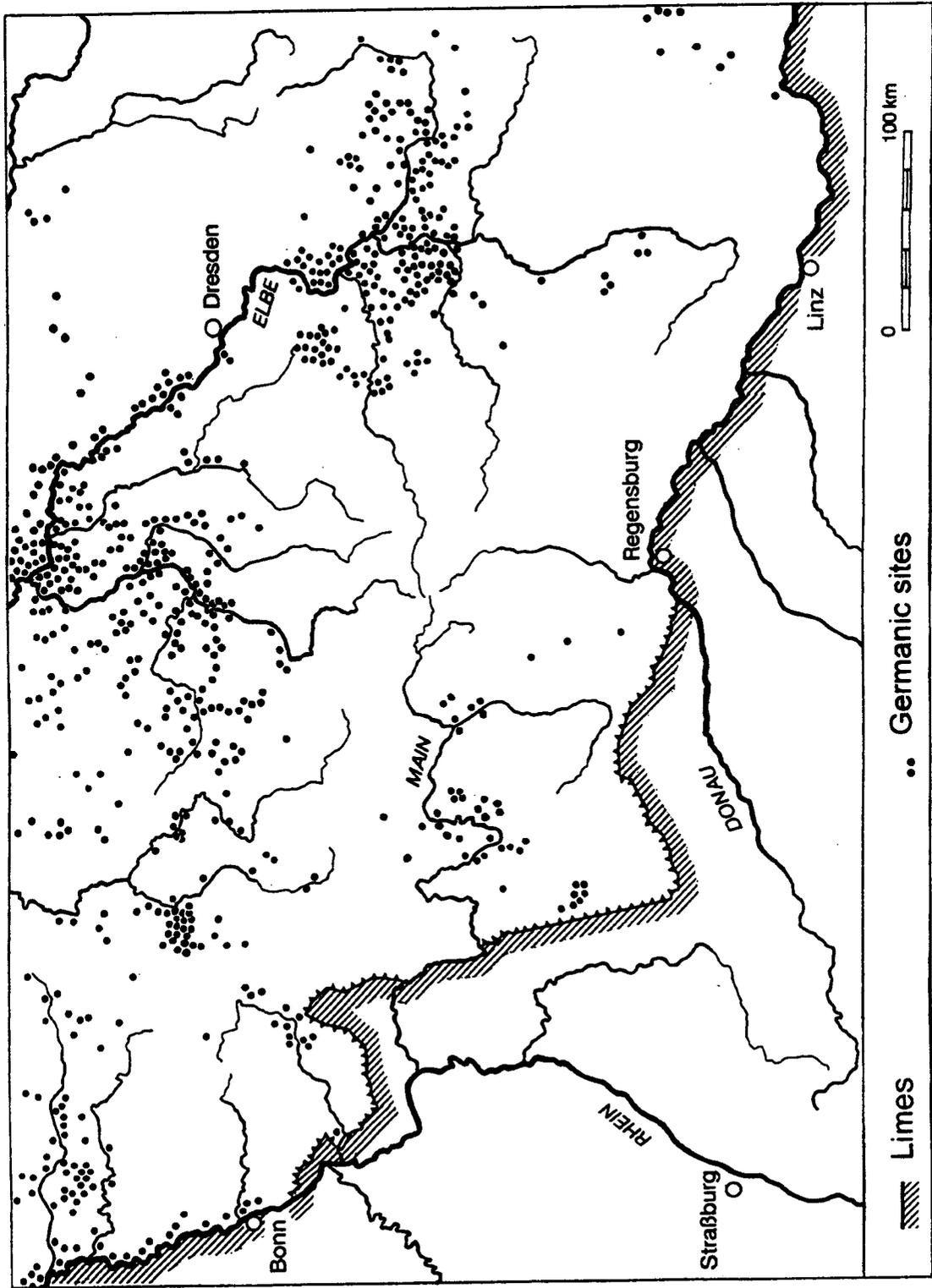


Fig. 4 Germanic sites in front of the limes.

The military forces of Upper Germany consisted of two legions stationed behind the *limes* at Mainz and Strasbourg; further an auxiliary force of about 4 *alae* and 24 *cohortes* and finally, a number of special small units, the so-called national *numeri*. Most of the auxiliary units were stationed on the *limes*. The map Fig. 2 shows the mountain ranges Taunus and Odenwald in the early period garrisoned by *numeri* only. The larger auxiliary units—*alae* and *cohortes*—were stationed along sections of the *limes* in more open country, for instance around the Wetterau, or along the river *limites* on Main and Neckar.

How did the Roman army keep watch on the line of the *limes* proper? The well-preserved *limes* in the Odenwald mountains may provide an answer. This section of the Upper German *Limes* was built about A.D. 90 or A.D. 100 and given up in c. A.D. 160, when the units were moved eastwards to the new outer *limes*⁵. (fig. 3). At a typical tower site there were regularly two building phases, often still visible: the remains of a timber tower and a

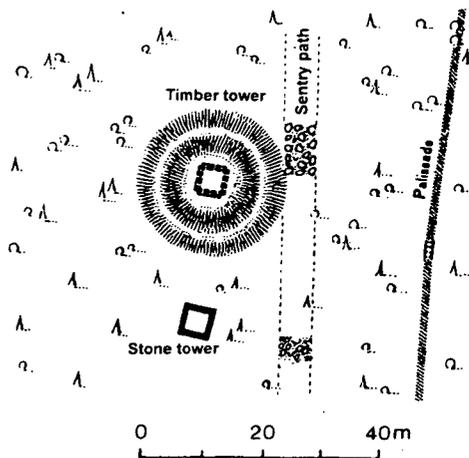


Fig. 5 Odenwald limes, tower site 10/27.

stone tower side by side (fig. 5). First came the timber towers (fig. 6), later the stone towers, built in the early Antonine period. The chronology is well known, because the stone towers carried building inscriptions, for instance tower 10/33 of the Odenwald *limes*

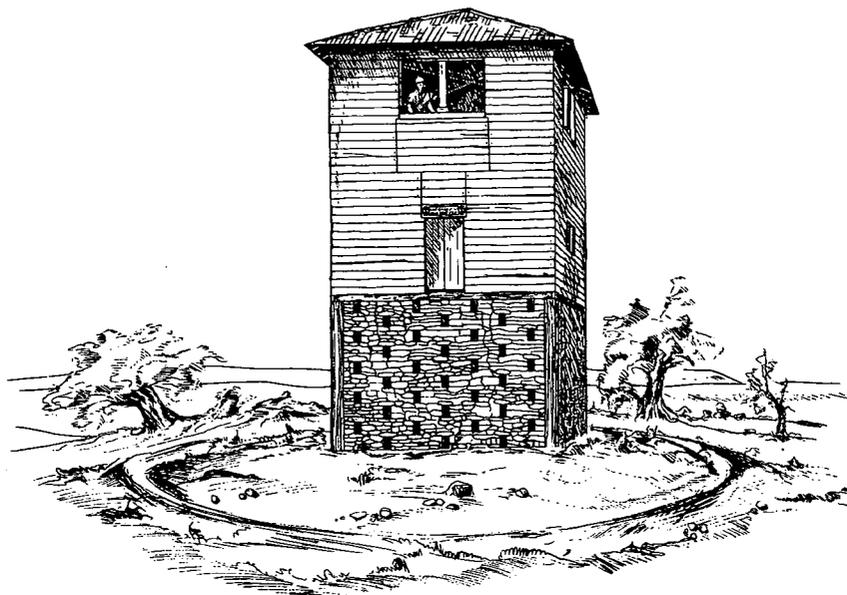


Fig. 6 Odenwald limes, timber tower reconstructed. The base is built from timber and stone without mortar binding, the upper storey of timber or half-timber (the shingles are conjectural); around the tower is a drainage ditch.

(fig. 7). This particular tower was erected in A.D. 146 under Antoninus Pius by a *numerus* of Britons, the *Brittones Triputienses*, which were stationed in one of the nearby forts. A reconstruction of the tower may indicate how the inscription was inserted (fig. 8). The towers were small; the internal width of the rooms came to about 12 to 15 feet (3.6–4.5 m). Only a few soldiers could live in such a tower. I estimate the strength of the number manning the tower at four or five men⁶. Meanwhile under Hadrian the palisade had been built along the line as an extra obstacle (figs 5 and 8). All stone towers were plastered (fig. 9). On the white plaster masonry and architectural decoration were painted with red lines. Shining white and red, the towers made a hard contrast against the green landscape. Visibility of the line obviously was a basic factor. Nobody could overlook the *limes*.

The small fort at Hesselbach (0.6 ha) is one of the few excavated examples of *numerus* forts (fig. 10). The plan illustrates the internal



Fig. 7 Odenwald limes, stone tower 10/33, Building inscription of Brittones Triputienses ("Britons of the three springs") in A.D. 146: Imp(eratori) Caes(ari) Div(i) Hadr(iani) fil(io) T(ito) Ael(io) Had(riano) Antonino Aug(usto) Pio p(ontifici) m(aximo) trib(unicia) pot(estate) VIII co(n)s(uli) p(atri) p(atriciae) Brit(tones) Triput(ienses) Claro II et Severo co(n)s(ulibus).

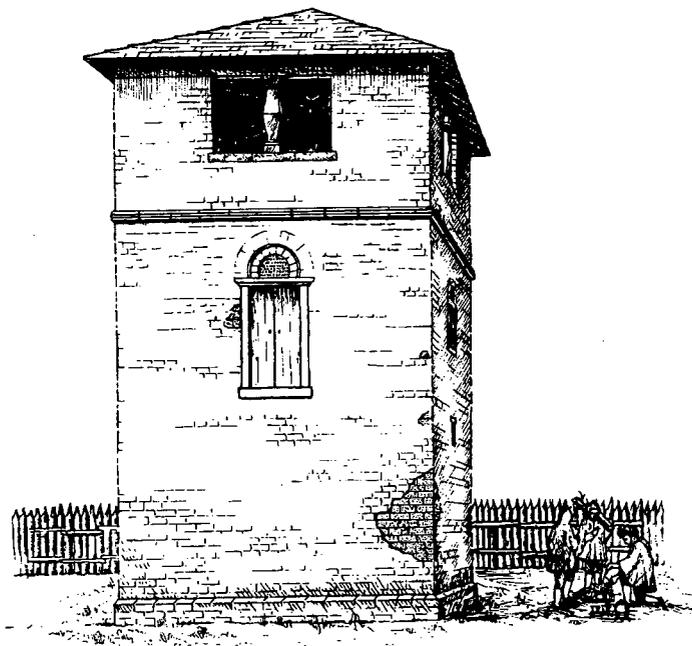


Fig. 8 Odenwald limes. Stone tower reconstructed.

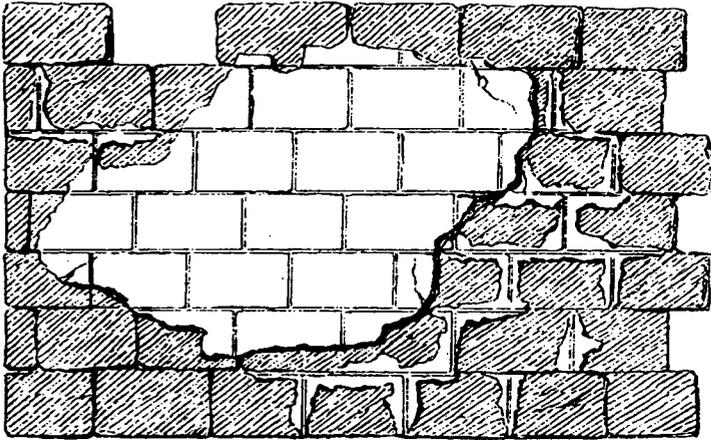
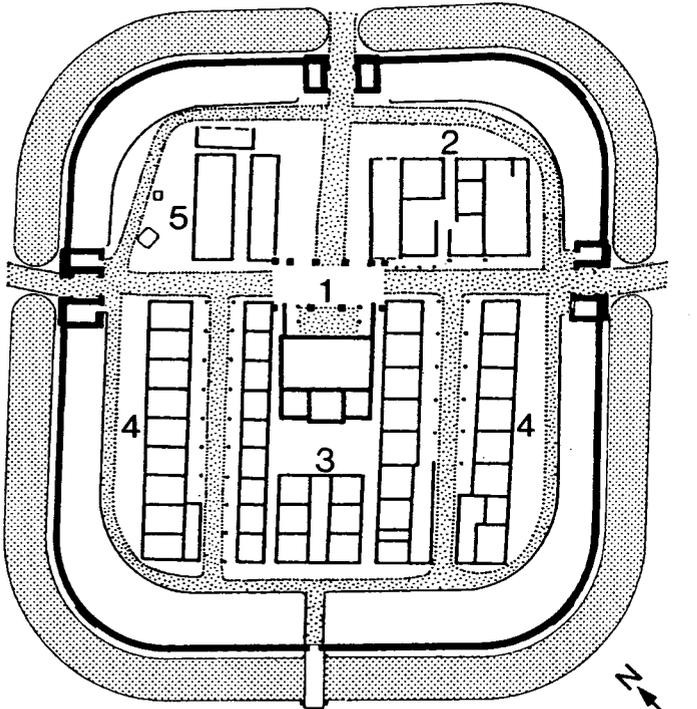


Fig. 9 Odenwald limes. Ashlar face of stone tower 10/22, covered with plaster. The white plaster shows imitated ashlar joints scratched in and painted red. Excavation drawing after ORL.



- 1 Principia
- 2 House of *praepositus* (?)
- 3 Extra accomodation (cavalry?)
- 4 Barracks
- 5 Stables or magazines

0 30m

Fig. 10 Hesselbach numerus fort, early Antonine building phase.

buildings of the fort, complete with *principia*, commandant's house, stable and barracks⁷. The unit, a *numerus Brittonum*, probably fell into two centuries of 80 men, each century living in a double barrack on the sides of the *principia*. In any case the garrison will not have been larger than about 160 men. The architecture of the fort is a smaller version of the larger auxiliary forts of *alae* and *cohortes*. The *numeri* in the Odenwald were provided even with bath houses, and small *vici* developed next to the forts.

As a typical section of the Odenwald *limes* the line between Würzburg⁸ and Hesselbach forts may be picked out (fig. 11). The distance is 6.5 km, running through the lonely mountain forest. On the line were six small watch-towers each manned by perhaps 5 soldiers each.⁹ This gives a total of about 30 soldiers guarding the 6.5 km section. In each of the small forts a *numerus* was stationed having a strength of about 160 men. If the number of soldiers on watch is subtracted, there remain 130 troops as a reserve in each fort. Obviously a force of 5 men per kilometre is by far too weak to defend the line against a mass attack of a Germanic force. Also the 130 men reserve in the fort could by no means stop an attacking tribe.

The Roman army however built the *limes* in such a way and maintained the installations for many decades. The provincial governor must have regarded the *limes* both as necessary and sufficient, which did not exclude necessary improvements. Obviously the *limes* never was intended as a line of defence in war. This type of frontier was unsuited for war, but effective against infiltration of small raiding parties. The crew of a tower was not intended to fight, but to observe and give signals along the line to the next fort. There an emergency party would go out to intercept the intruders. Such Germanic raids must have been a real threat as long as the *limes* existed. This was an outcome of the primitive social structure of the Germanic tribes. Even if they had a treaty with Rome, a tribe often was unable to bind all of its clans into the treaty.

As already pointed out, *alae* and *cohortes* were stationed along *limes* sections near open

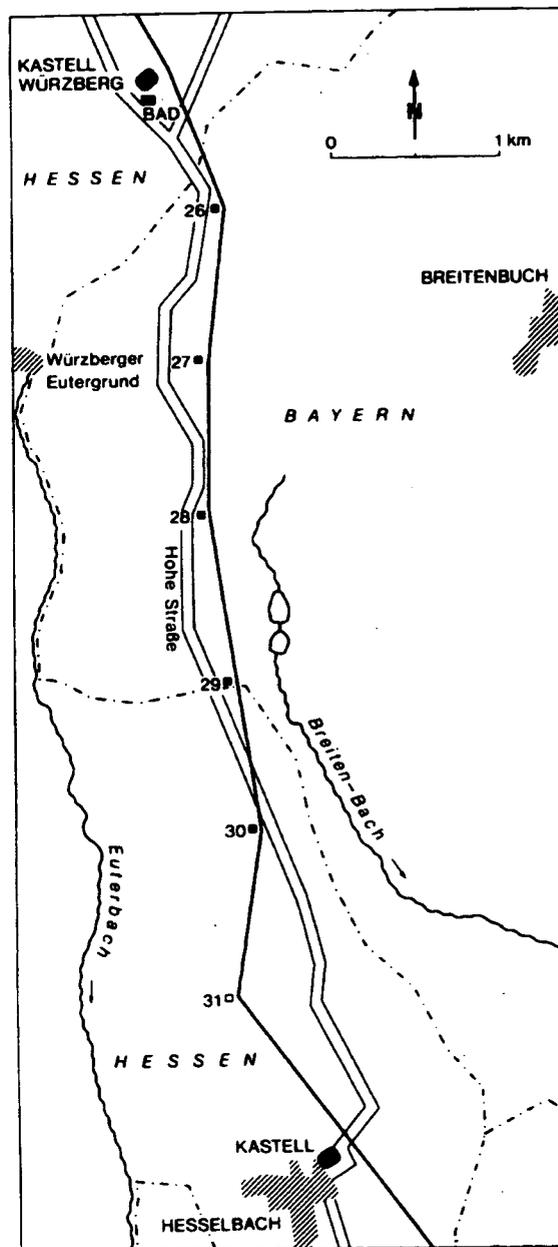


Fig. 11 Odenwald *limes*, section between Würzburg and Hesselbach *numerus* forts with tower sites 10/26-31.

country, for instance in the Wetterau. A typical section there is the line from Rüdkingen to Großkrotzenburg forts. The distance is 8.2 km, and there were eight watch towers along the line¹⁰. The size and spacing of towers were about the same as in the Odenwald. This

implies that both sections were similar in function. As garrisons of the two cohort forts *cohortes quingenariae peditatae* are known¹¹. Under Hadrian an extra fortlet (Neuwirtshaus) was added in the middle of the line, but given up about fifty years later¹². In

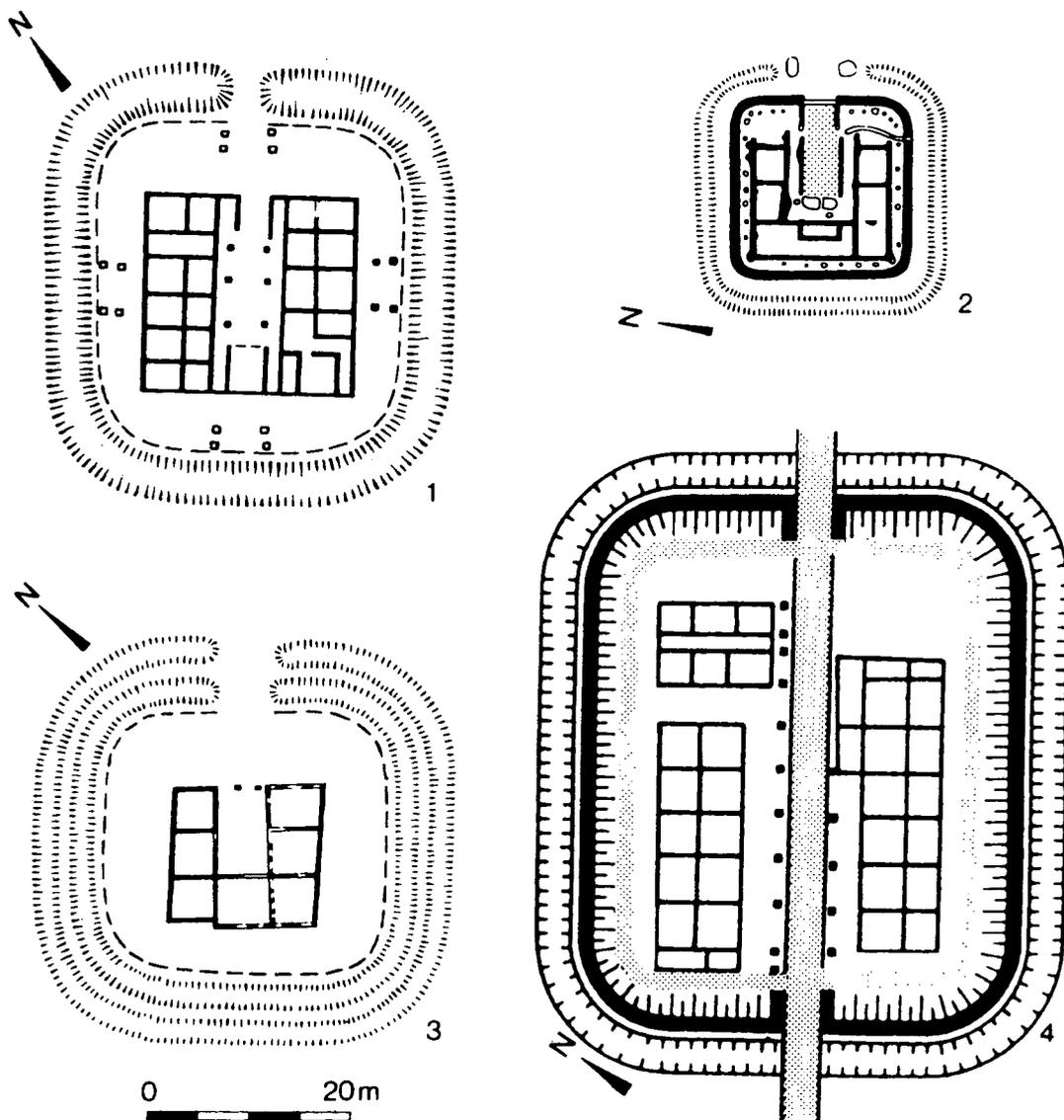


Fig. 12 Upper German Limes. Selection of typical fortlets: 1 Butzbach-Degerfeld; 2 Rötelsee near Welzheim; 3 Pohl near Kemel; 4 Haselburg near Walldürn.

any case, only a small proportion of troops available in the adjacent forts was necessary to keep guard along the line.

There was a number of fortlets on the Upper German *limes*, but they were neither regularly spaced like the milecastles of Hadrian's wall nor did they all have the same function or chronology (fig. 12). Some were built as a reinforcement, if a *limes* section between two forts proved too long. Others acted as a guard at crossing points or as extra reinforcement on some endangered places. The size and layout of the fortlets were quite different. In most cases we do not know the garrison. The soldiers manning them may have been detached from the next cohort or *numerus*. But there are also indications that some fortlets were manned by very small special units. This may have been the case in the Haselburg near Walldürn¹³ (fig. 12,4), where the garrison may have consisted of a small *numerus* of *Brittones dediticii*, which are mentioned in an inscription of A.D. 232 from Walldürn bath-house¹⁴.

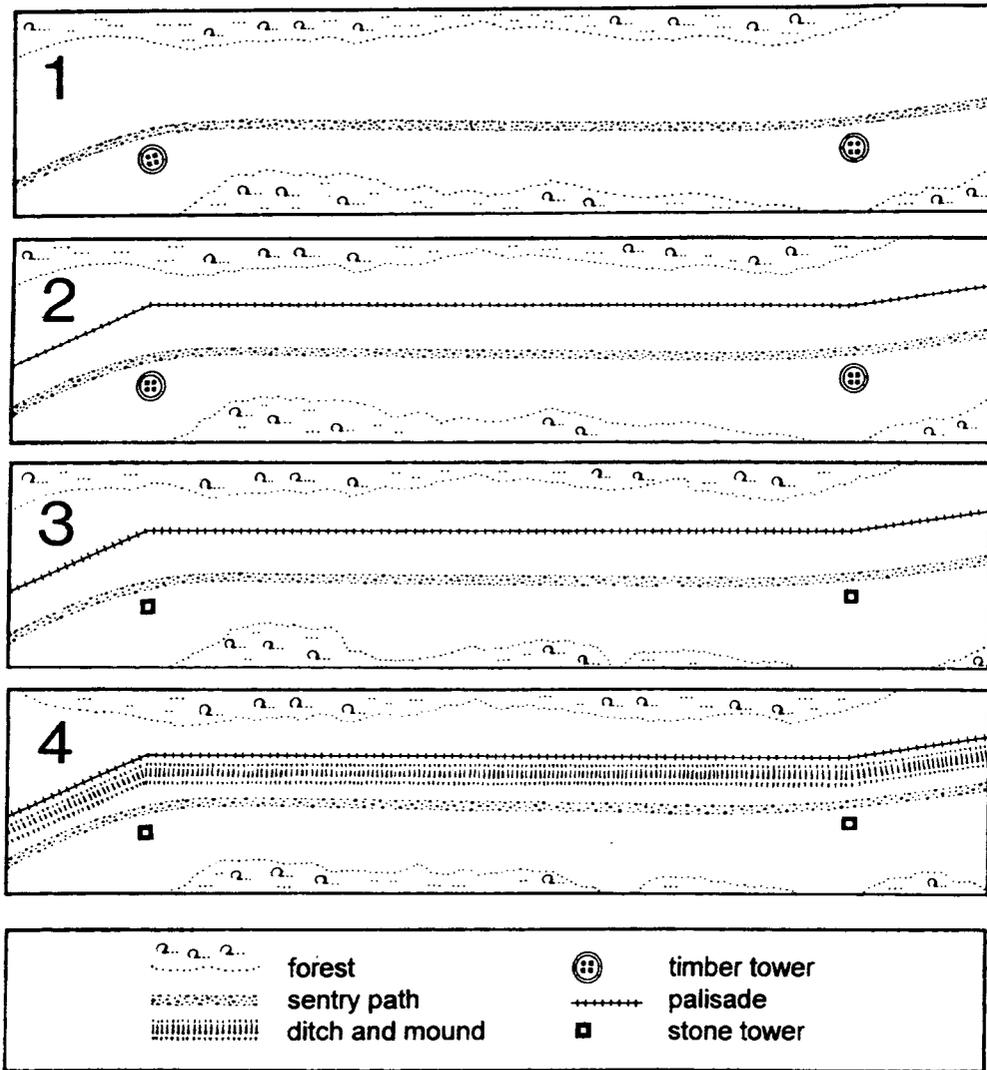
In contrast to the Odenwald line the Wetterau *limes* was not moved. Therefore this *limes* section went through all four main building phases of the Upper German *Limes*¹⁵ (fig. 13). Only in the last phase 4 the mound and ditch of the *limes* were added behind the palisade. The mound simply was thrown up from earth taken out of the ditch. There was no parapet and no sentry path on top of the mound. Some tower sites show the chronological sequence by overlapping structures (fig. 14). Ditch and mound acted as an additional obstacle only. They never were meant for defence and did not change the function of the *limes*. This obstacle, in German *Pfahlgraben*, went over 360 km all along the border of Germania superior (fig. 15). Many watch-towers were even smaller than on the Odenwald line. The towers are often reconstructed on the model of the towers of the Moesian *limes* illustrated on Trajan's column. The reconstruction Fig. 16 illustrates the narrow living-space inside such a tower.

To sum up: The *limes* was built as a means against infiltration of small raiding parties, not

as a defence line, its installations being unsuitable for defence in war. Taking advantage of the terrain, the *limes* avoided as far as possible Germanic tribal territory. By diplomatic means the tribes adjacent to the *limes* may have been bound into treaties, assuring a peaceful climate along the frontier during most of the time. Therefore only a minimum of military personnel was necessary to guard the frontier.

Often there were two auxiliary units stationed at a particular fort site. This constituted a characteristic peculiarity of the Upper German *limes*. At some sites there were double forts—two forts at a site; others had double garrisons—two units being accommodated in a single fort. As examples the fort sites of Saalburg, Neckarburken and Welzheim may be offered. Other double garrisons are known or may be suspected with some reason in Niederbieber, Echzell and Oberflorstadt; further double forts are known in Miltenberg and Öhringen, suspected with good reason in Heilbronn-Böckingen, Benningen and Murrhardt. This is quite a high proportion of all forts known on the Upper German *Limes*. There may have been more double garrisons, but many sites were excavated about a hundred years ago using excavation techniques of that time and consequently do not yield enough information¹⁶.

The Saalburg is situated on top of the Taunus (fig. 2 no. 9). The fort is well known owing to comprehensive excavations about a hundred years ago, and also because of the fort reconstruction erected in the same period¹⁷. The plan Fig. 17 shows as first period a small timber fort of classical *numerus* size (0.6 ha). The small unit stationed there performed the guard duties on the *limes* over more than four decades, from about A.D. 90 until c. A.D. 135, when a cohort was moved to the site. The later cohort fort, built for a *cohors quingenaria equitata* (the *cohors* II Raetorum c.R.) covers the extraordinarily large area of 3.2 ha. Therefore I suspect that the first unit stationed in the small timber fort did not leave but stayed on together with the cohort in the large fort, continuing the watch



Upper German Limes, the four building phases:

- | | | |
|---|---|-----------------------------|
| 1 | Timber towers and sentry path only. | Late Flavian - Hadrian |
| 2 | Timber towers, sentry path and palisade. | Hadrian - ca. AD 145 |
| 3 | Stone towers, sentry path and palisade | ca. AD 145 - ca. AD 180/200 |
| 4 | Stone towers, sentry path, palisade,
ditch and mound | ca. AD 180/200 - ca. 260 |

Fig. 13 Main building phases of the Upper German Limes.

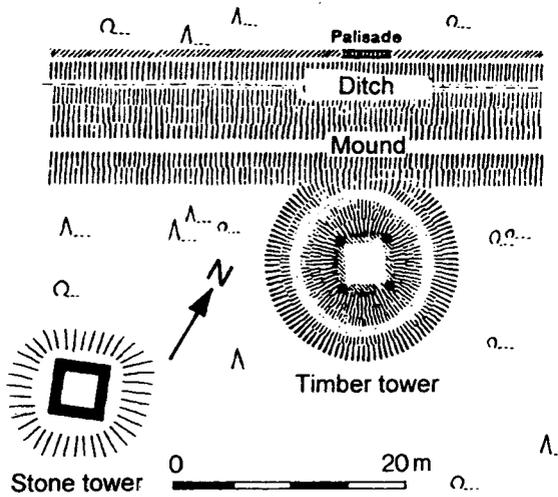


Fig. 14 Taunus limes, tower site 3/52. The mound of limes phase 4 covers the timber tower ring ditch of limes phases 1-2.

duty along the *limes*. Two units staying in the fort would explain its extraordinary size. There is almost no epigraphical evidence for the garrison of the small timber fort¹⁸. But the excavation yielded a considerable group of British brooches of the first half of the second century, being not common on the Upper German *Limes*. They indicate a *numerus Brittonum* as garrison of the small timber fort¹⁹.

Neckarburken is located south of the Odenwald, in the valley of the small river Elz (fig. 2 no. 40; fig. 18). In Neckarburken, the small fort of the *numerus* and the large one of the *cohors quingenaria equitata* were built separately²⁰ (fig. 19). The larger western fort accommodated the cohort only. Accordingly, the area of this fort was significantly smaller than that of the Saalburg. Each Neckarburken unit used a bathhouse of its own. The bathhouse of the small fort was partly excavated some years ago by E. Schallmayer and yielded an interesting and important inscription of the *Brittones Elantienses* ("Britons stationed on the river Elz")²¹.

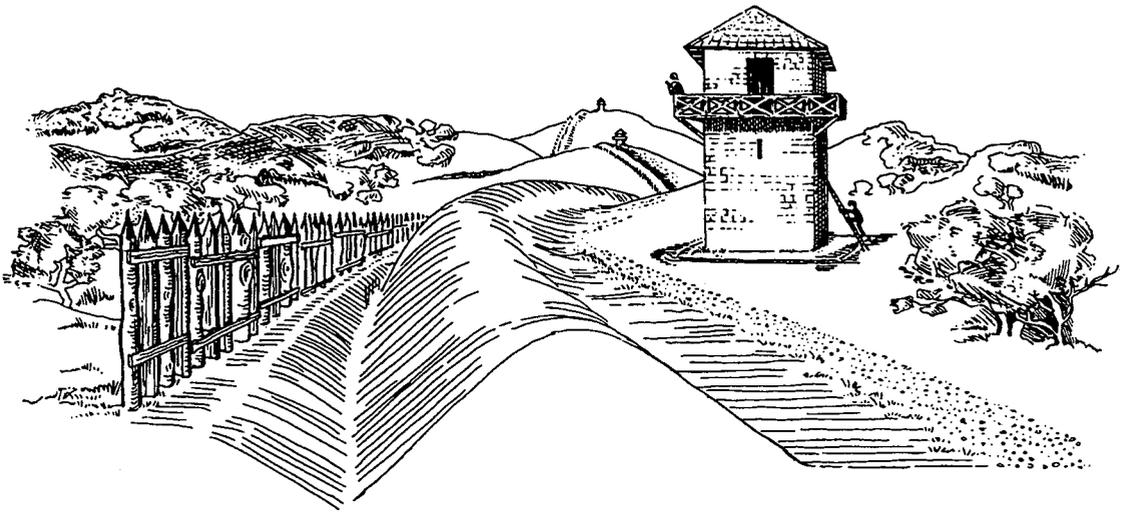


Fig. 15 Upper German Limes phase 4. Reconstruction.

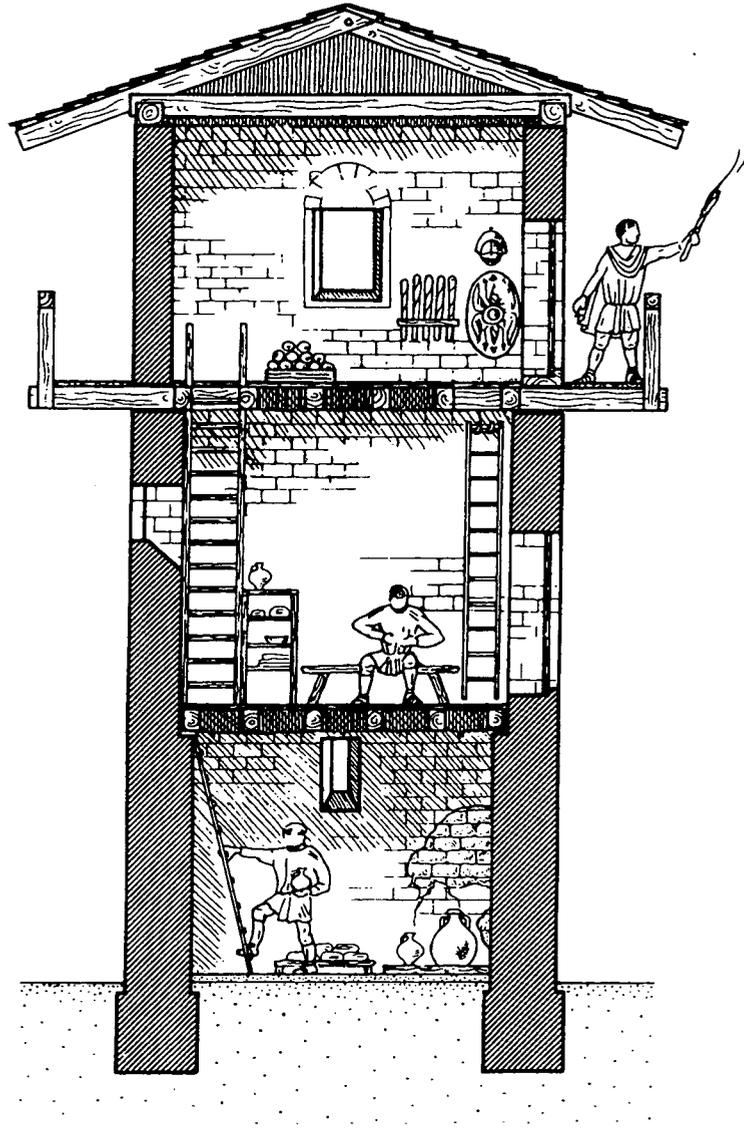


Fig. 16 Upper German Limes, conjectural section through stone tower. Upper storey reconstructed after relief on Trajan's column, Rome.

About A.D. 160, when the *limes* was shifted east, the Neckarburken units were moved to Osterburken on the outer *limes* (fig. 18). There the two units camped together: the cohort in the main fort, the *numerus* in the fort annexe²².

Near the southern end of the Upper German *Limes* there is Welzheim (fig. 18), site of a double fort on the outer *limes*, quite similar to Neckarburken²³. The large fort accommodated an *ala quingenaria*²⁴, the small one probably

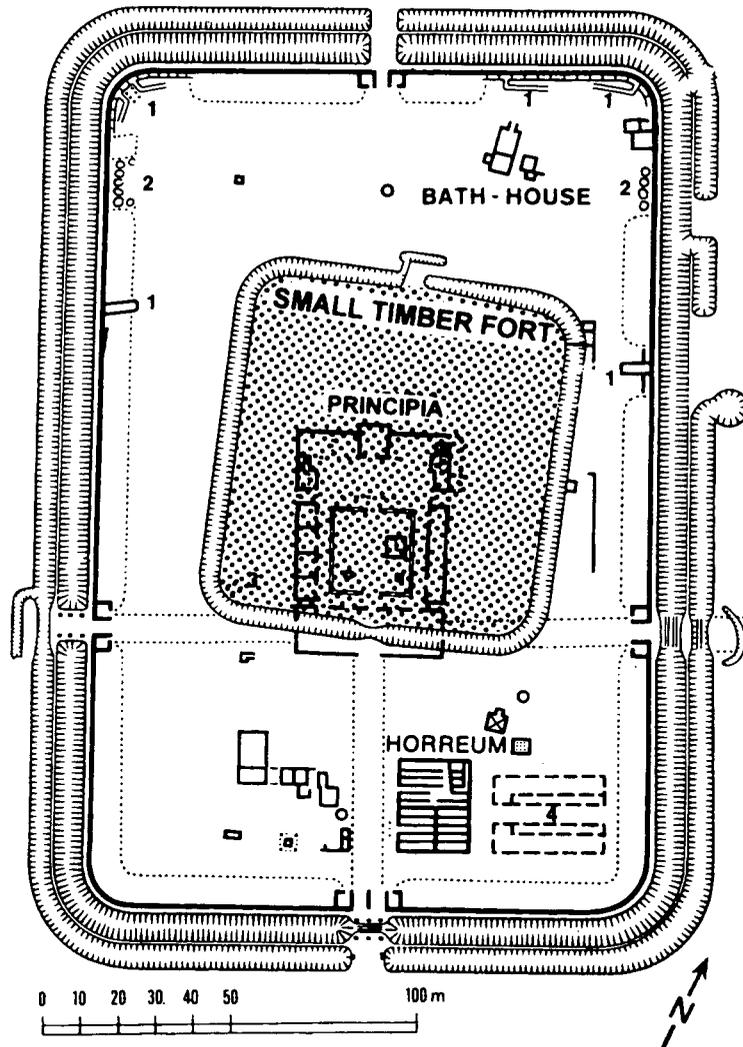


Fig. 17 Saalburg cohort fort. Shaded: small timber fort (0.7 ha) of *numerus* Brittonum(?). Small timber fort about c. A.D. 135 replaced by large fort (3.2 ha) of Cohors II Raetorum c.R. and *numerus* Brittonum(?).

two *numeri* (fig. 20). The situation of Welzheim is particularly instructive. South of Welzheim the *limes* turns in a sharp bend to the east and runs over to Raetia. The bend was caused by extended forests in front of the *limes*, still existing today as Welzheimer Wald, Limpurger and Ellwanger Berge. The Romans left these forests outside the *limes* as an extra

barrier. The forest area stretched over about 50 kilometres from Welzheim to the east. Difficult ground with deep ravines running from south to north further impede movement in the forests. The terrain is utterly unsuitable for cavalry employment. Another even larger cavalry unit, the *Ala II Flavia milliaria*, was stationed in Aalen south of the forest area²⁵. Both

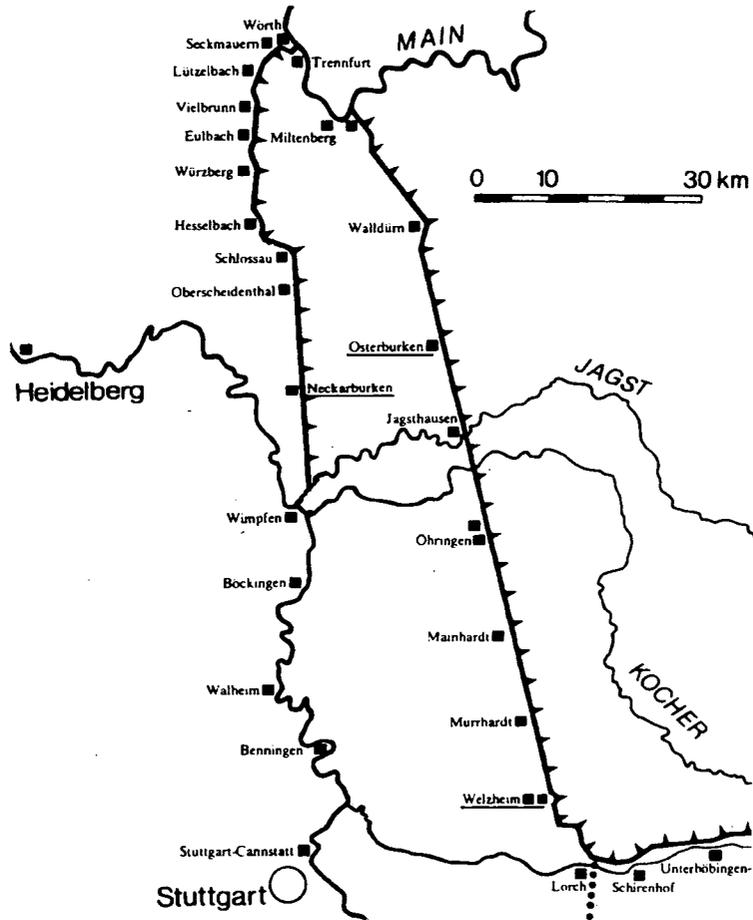


Fig. 18 Upper German Limes, southern section. Building phases not distinguished. Fort sites of Neckarburken, Osterburken and Welzheim underlined.

alae could not operate in the adjacent region beyond the *limes*.

Why did the Roman military command locate both *alae* there? The region is situated on the threshold between the Rhine and Danube provinces. If any trouble originated in the east or in the west, 1500 cavalry troopers plus additional horsemen from nearby *cohortes equitatae* could be moved very quickly to the area of conflict without exposing the *limes*, because *numeri* and cohort infantry just

continued keeping the watch²⁶. Even in case of civil unrest in Italy or Rome itself the cavalry could be on the spot quickly. In this way the cavalry units on the *limes* constituted one of the *arcana imperii*.

I suspect that the same intention lies behind the other double forts and double garrisons of the Upper German *Limes*. The Raetian *Limes* displays a similar organization. There also double forts are known²⁷, and the line of the *limes* itself was guarded by a minimum of per-

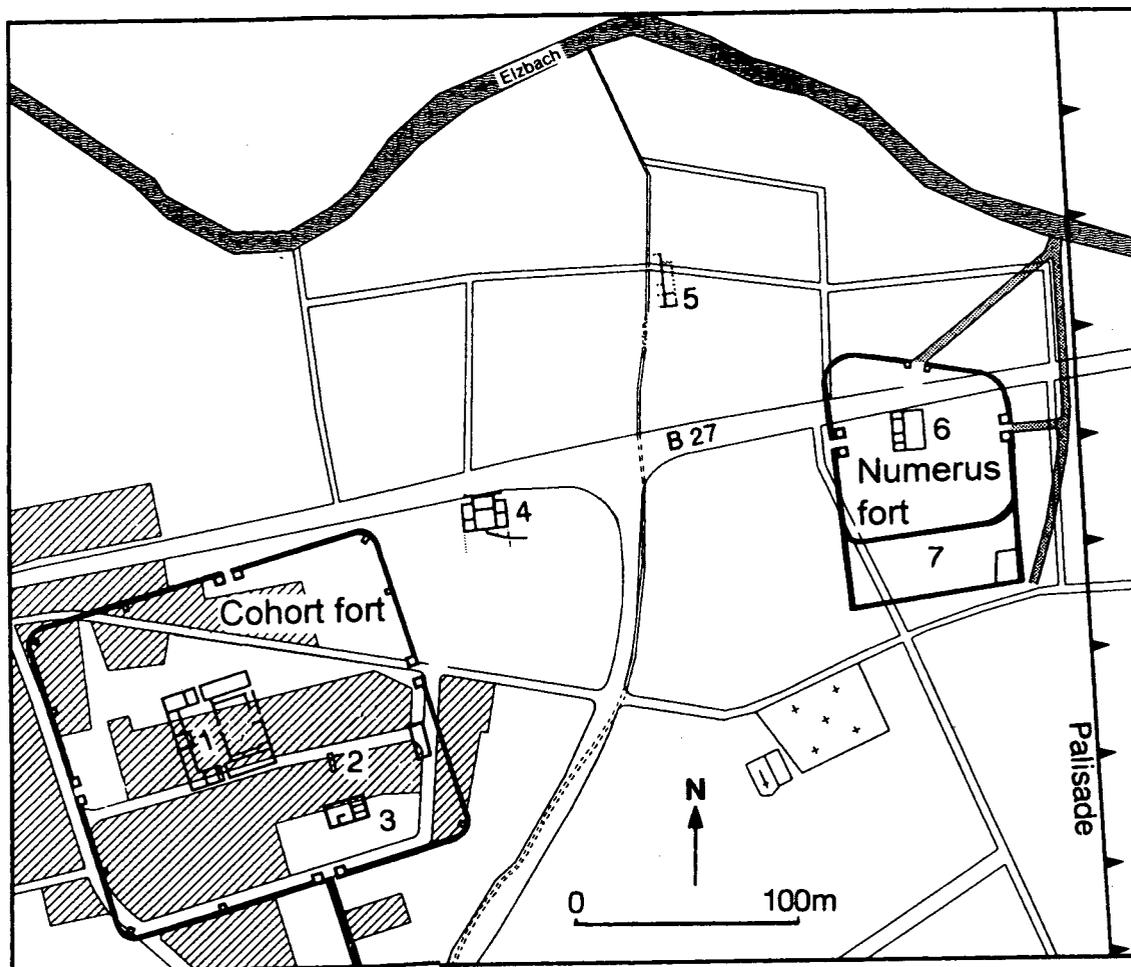


Fig. 19 Neckarburken. Cohort fort of Cohors II Aquitanorum c.R. equitata (2.2 ha) and numerus fort of Brittones Elantienses (0.6 ha). 4 bathhouse of cohort; 5 bathhouse of numerus; 6 main building of small villa rustica erected after c. A.D. 160 over the principia of the numerus fort; 7 extension built after c. A.D. 160 for villa rustica.

sonnel. In case of emergency, the Roman military command could pull out quite a proportion of regular auxiliary units without interrupting the routine watch along the *limes*. This specific organization of the *limes* improved the mobility of the Roman army considerably²⁸.

The view presented here contrasts with the conventional notion of "the static lining up of units along the *limes*" which is said to have

impeded field operations of the Roman army. In reality, the organization of the *limes* provided flexibility of deployment. Indeed, many wars have been fought successfully, where complete units or vexillations were required by other frontier provinces: the conquest of Britain, the Dacian wars of Trajan, Hadrian's war against the Jews and the campaigns of Septimius Severus in Britain are examples. Certain innovations in the organization of the

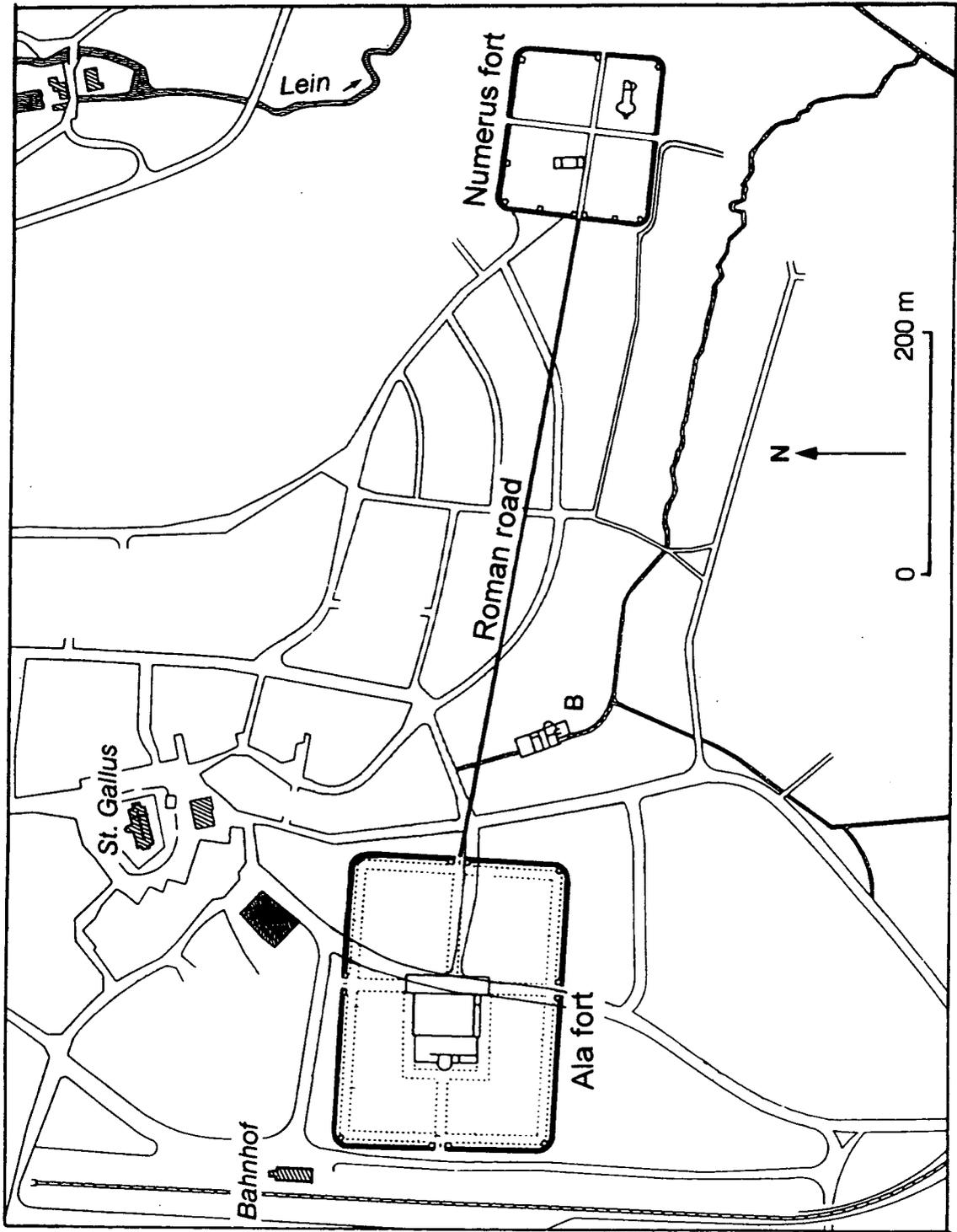


Fig. 20 Welzheim. Ala fort of unknown ala quingenaria (4.3 ha) and numerus fort of Numerus Brittonum and Exploratores (1.6 ha). B bathhouse of ala.

Late Roman army will have had their origin there.

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Sources of illustrations

Figs 5, 7, 9, 14: ORL. Figs 1, 17: Saalburg museum guide, modified. Fig. 2: *Roman Frontier Studies* 1969 (Cardiff 1974) 116 Fig. 30. Figs 3, 4, 6, 8, 10, 12, 13, 15, 16, 18: LF. Fig. 11: RH.—Figs 19, 20: RBW, modified.

NOTES

¹ Recent basic information on the Upper German *Limes* may be found in: RT, RBW, RH and LF (see bibliography).

² Discussion concerning the end of the Upper German *limes*: Nuber 1990; Kuhnen 1992; Schallmayer 1996.

³ Tac. Germ. 2 and 5.

⁴ Pescheck 1978.—B. Beckmann, RH 316–18.

⁵ Date of moving the *Limes* eastwards: Speidel 1986.

⁶ Baatz 1976, 42–5.

⁷ Baatz 1973.

⁸ RH 498–500.

⁹ *Limes* section Würzburg-Hesselbach: RH 422–3.—Size and crew of *limes* watch towers: Baatz 1976.

¹⁰ RH 412–13.

¹¹ Rückingen fort: RH 466–8; LF 170; garrison: *Cohors III Dalmatarum p.f.*; fort area 2.5 ha.—Großkrotzenburg fort: RH 325–8; LF 173–4; garrison: *Cohors III Vindellicorum*; fort area 2.2 ha.

¹² RH 337–40.

¹³ H.-U. Nuber, RBW 606–8.

¹⁴ CIL XIII 6592; Baatz 1978, 94–5.

¹⁵ RH 146–8; LF 42–9.

¹⁶ Niederbieber: LF 95–7; Echzell: LF 164–5; Oberflorstadt: LF 166; Miltenberg: LF 215–17; Öhringen: LF 236–7; Heilbronn-Böckingen: LF 208–9; Benningen: LF 210; Murrhardt: LF 243–4.

¹⁷ RT 461 No. D44; RH 469–74; Klee 1995.

¹⁸ CIL XIII 11954a; Böhme 1970, 13 note 72; inscription of quern: *con(tubernium) Brittonis*.

¹⁹ Böhme 1970.

²⁰ RT 467 No. D80; E. Schallmayer, RBW 279–85; LF 204–5.

²¹ Schallmayer 1984; Speidel 1986.

²² RT 480f. No. E63; E. Schallmayer, RBW 468–476. The cohort fort annexe was not built until c. A.D. 185. Before 185, the *Brittones Elantienses* perhaps were accommodated in a separate fort as in Neckarburken: LF 228.

²³ RT 483f. No. E69; D. Planck, RBW 611–17; LF 246–8.

²⁴ There are inscription fragments from Welzheim mentioning an *ala*, but the name of the unit is not preserved: CIL XIII 6527–8.

²⁵ Aalen, already in Raetia: D. Planck, RBW 203–10; LF 257–9.

²⁶ Arrian, *Acies contra Alanos* describes a task force of Hadrianic date. Besides legionary and aux-

iliary infantry the force included a considerable proportion of cavalry: four *alae quingenariae*, the *equites singulares* of the governor and eight units of cavalry taken from *cohortes equitatae*. Five of the latter were present without their cohort infantry which may have remained in their forts on the Capadocian *Limes*.

²⁷ The distance between such double forts (pairs of forts) is larger in Raetia than in Upper Germany and may amount to some kilometres. The fort of the smaller unit of lower rank is always located nearer to the line of the *limes*. The following pairs of forts may be mentioned: Aalen (*ala mill.*) and Rainau-Buch (*cohors quing. ped.*); Weißenburg (*ala quing.*) and Ellingen (*numerus?*); Pfünz (*cohors equ.*) and Böhming (*numerus?*).

²⁸ There remains the question if other *limites* of the Empire had a similar organization. The building structure of Hadrian's Wall was very different from the Upper German *Limes*. Little is known from the garrison of the milecastles. Did the horsemen of the *alae* in Chesters and Stanwix really keep watch in the nearby milecastles? In Housesteads, the garrison during the third century was at times the *cuneus Frisiorum* and the *numerus Hnaudifridi* besides the *cohors I Tungrorum milliaria*; Daniels 1978, 138. So this fort had a composite garrison at least for some time.