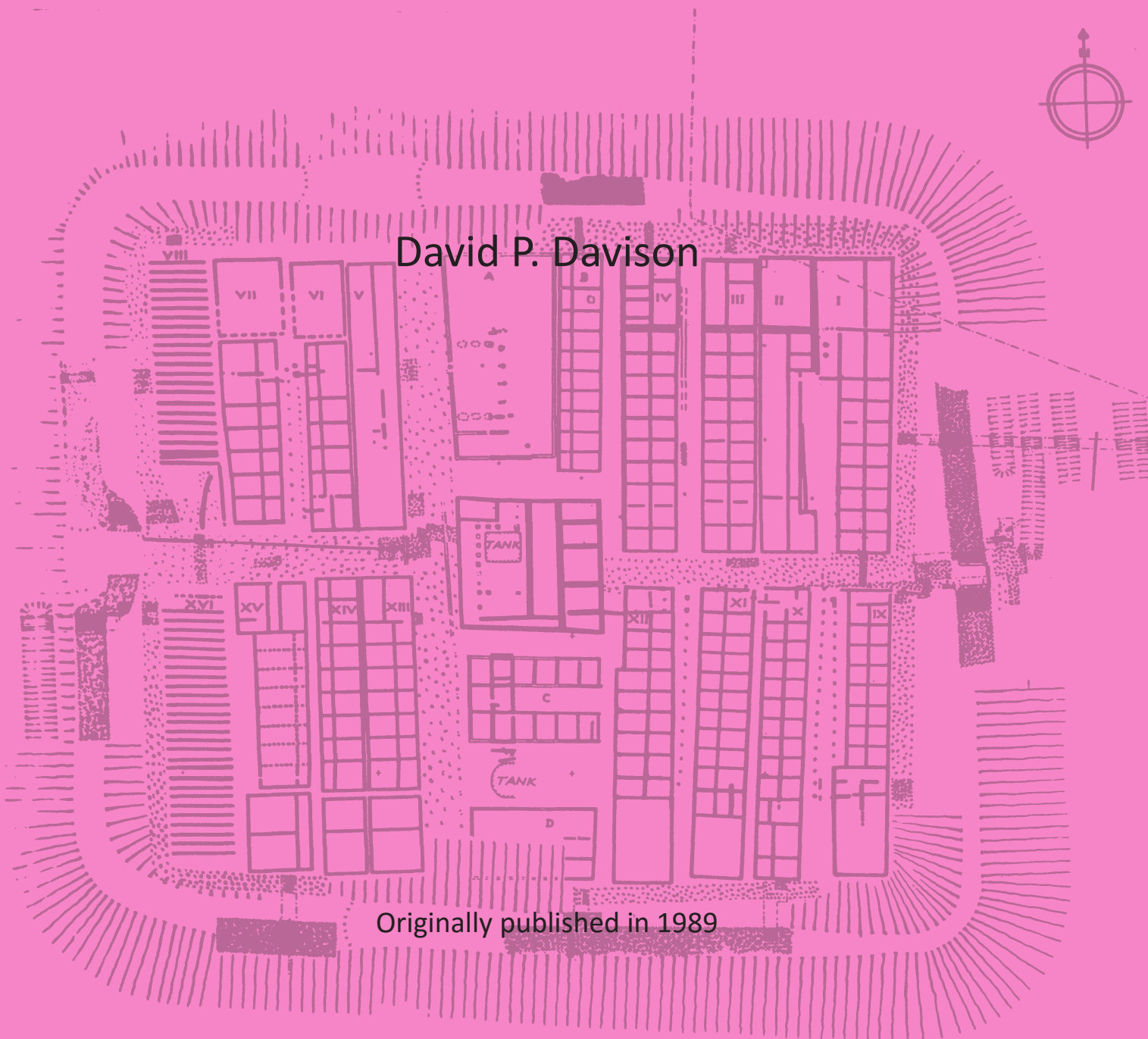


THE BARRACKS OF THE ROMAN ARMY FROM THE 1ST TO 3RD CENTURIES A.D.

A comparative study of the barracks
from fortresses, forts and fortlets with
an analysis of building types and
construction, stabling and garrisons

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To my parents

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Chapter 1

The Evidence

Introduction: Roman military barracks

In their excavations at the Roman fort of Cappuck, Roxburghshire, in 1911-12, Stevenson and Miller were able to distinguish 'two oblong buildings of the usual barrack type' and 'traces of what looked like a third'. In their report, they wrote that 'such buildings are almost always found in Roman forts and call for no comment' (Stevenson and Miller 1911-12, 464). Such an observation may now appear somewhat brusque; rather more considered are the words of John Ward in his report on the excavations at Gelligaer. In 1903 (49) he wrote:

'If a number of plans of Roman forts, that of Gellygaer included, be compared, it will be found that while in no two of them do these buildings exactly agree, there is a general correspondence both in their forms and distribution'.

Ward was writing not only about barrack buildings, but essentially his observation remains true of them today. In spite of the considerable amount of evidence recovered since the beginning of the century, in many ways it is still not possible to go further than Ward's statement. All too often the barracks appear similar and are arranged in familiar patterns, but nevertheless withhold their full meaning. While Ward's words remain true, few would now agree that barracks call for no comment.

The very mass of barrack evidence, whose buildings at least are clearly all of the same family, challenges an understanding of its variation and variety and of the manner in which the variety is complicated by change and development through time, by location in different provinces, by the vagaries of different architects and builders and even by the impact of different building materials. More specifically it challenges an interpretation of the essential differences between legionary and auxiliary barracks (of increasing importance as it comes to be understood that legionaries not uncommonly formed whole or part of the garrisons of auxiliary-sized forts and that auxiliary units also are to be found quartered in legionary fortresses (for example at Neuss) and of the differences between barracks of different kinds of auxiliary unit. With the increase in material it also becomes possible to consider the ways in which the barracks relate to each other within fortress, fort and fortlet, for example in terms of seniority or simply for the organisation of such tasks as the baking of bread.

There are more direct questions which the study of the barracks may help to answer. For the legions, the problem of the double-strength first cohort remains, nor is it certain where in the fortress the legionary cavalry were accommodated. The location of their mounts is just as much a problem.

For the auxiliaries the question of garrison remains a vexed one. In this connection Breeze and Dobson (1974) have demonstrated the potential significance of the total number of buildings in a fort and the importance of identifying the stables where present. Surely there ought to be a

recognisable difference between infantry and cavalry barracks and at least it ought to be possible to recognise a stable. But this latter has remained a problem and certainly no 'stable type' has been established; their recognition could provide a key to the identification of certain garrisons and barrack types.

Breeze (1974c; 1977c) has done much to explain the working of fortlet barracks, but there is yet room to explore just how closely the fortlet barracks relate to ordinary auxiliary barracks.

For many of these questions, the written sources of evidence are surprisingly unhelpful. We are left with the archaeological evidence from the fortresses, forts and fortlets themselves, that is the barracks and the stables/stores/workshops whose very identification is so often tentative and qualified.

Statistical Analysis

It must be stated that any statistical analysis of this material has to confront very considerable problems. For the reasons given above it has been considered important to begin by presenting the basic evidence from the fortresses, forts and fortlets together, yet the provenance of this evidence is thoroughly mixed. The legionary fortresses themselves vary considerably in date, size and conformation and this is even more true of forts and fortlets. Such differences may have profound effects on the nature of the barracks. It is possible to compare the barracks according to period and province, but the other difficulties are not so easily overcome.

Again it has been considered important to include the whole range of available material rather than to concentrate on a smaller number of recently-excavated, well-known and possibly unrepresentative examples. But this has meant that the dates of the excavations considered here span broadly the whole of the present century with an inevitable variation in the quality of the evidence.

Furthermore, the degree to which all the barracks from the same fortress, fort or fortlet is known varies considerably. The sites which may be said to have been totally excavated by area excavation probably numbers just one, Elginhaugh, and even here it proved impossible to investigate the areas round the fort which, as will be shown, may be crucial for interpretation (Hanson 1987). Most sites have been only partially excavated in the sense either that the area of the excavation has been limited or that excavation has taken the form of narrow trenches. This technique can give accurate information on the overall dimensions of buildings, but cannot be said to give full details of the internal layout of the barracks. Only evidence which may be taken to have been reasonably proved by excavation has been included in this work.

The importance of this is shown by the evidence from the most recently and most fully-excavated forts such as Strageath, Elginhaugh and Hesselbach. This shows that neighbouring barracks, apparently of very similar dimensions, may have a different internal composition and that the barracks of the *praetentura* may in no way be taken as a model for those of the *retentura*; furthermore they may be differently aligned and of a different size. The evidence from Vindonissa shows that the same may be true at fortresses.

Thus only in a very limited way may the single barrack known from a fortress or fort be taken to be typical of that site; what is typical can only be learnt when the whole site has been excavated. In the same way it would be incorrect to take the mean of the various barrack dimensions from any one site as representative of that site; differences in barracks may, or may not, reflect important differences in function.

The only secure base for comparison is to consider every barrack actually known, ie the total sample of the whole population of barracks. Thus the bar graphs in Chapter 1 take the evidence provided by this total sample of barracks as their starting point.

Yet, in spite of what has been said above, it is true that where many barracks from the same building period of the same fortress or fort are known, often many are consistent in their composition and size. For legionary fortresses this is true of Inchtuthil, Chester, Caerleon and Neuss (although at all these sites there are relatively small numbers of barracks of a radically different nature); for auxiliary forts the same may be said for Newstead III and IV (*praetentura*), Elginhaugh (*praetentura*), Wallsend, Pen Llystyn, Gelligaer II, Valkenburg Castellum 1 (*latus praetorii*), Hofheim Steinkastell Period I (*praetentura*), Rottweil III (*praetentura*), Künzing, Drobeta and Slăveni. Certainly it is true that barracks from the same fortress or fort nearly always resemble each other more closely than barracks from other even contemporary fortresses and forts.

Thus the total sample of barracks tends to emphasise the barracks from those fortresses and forts which have been more fully excavated at the expense of those only partially excavated. If the present purpose were to examine only a small number of sites, the peaks resulting from those most fully excavated would be recognisable, but in considering the evidence in total, the provenance of such peaks is obscured and the overall picture is distorted. Thus in the composition of the graphs, in addition to the recording of the total sample it was decided also to record a 'corrected' sample. In the legionary fortresses every significantly different example from each site was recorded, but where the barracks of one cohort are all the same only one example for that cohort was recorded. Similarly for the auxiliary forts, every significantly different example from each site was recorded, but where the barracks are the same throughout the fort, or throughout one half of the fort, only one example for each quarter of the fort was recorded. It is acknowledged that this is not a scientific sample, the different numbers of barracks in different fortresses and forts and their different conformations and alignments ensure that; but it is believed that the resultant figures provide a more accurate representation of the total population of barracks than that of the total sample. Both samples are shown in the graphs which display the overall evidence in Chapter 1, but when the different subjects are examined according to period and province, and in greater detail in the subsequent chapters, only the amended sample is used.

Nowhere has the attempt been made to make statistical projections or to lay down statistical criteria on the basis of the figures presented; such would be inappropriate, incorrect and even meaningless given the nature of the subject and the evidence available. For example, the average for the overall size of a Flavian auxiliary barrack may be established using 'standard deviation' (although in many periods totals do not allow such a calculation) but there is little value in this when the evidence shows that such a norm is a misconception; what exists is rather a wide range from

forts of different sizes and conformations, and even from the same fort. Even barracks of the same overall size may have a radically different make-up which may be of much greater significance than their size. Rather the figures have been used to present the full range of the known evidence. It will be seen that it is the range of the evidence at any one time which is more significant than apparent high concentrations or averages.

It has been stated above that certain barracks in legionary fortresses are believed to have housed auxiliary troops and certain barracks in auxiliary forts are believed to have housed legionaries. Such questions will be discussed fully below, but in order not to prejudge the issue and to allow anomalies and exceptions more easily to be revealed, all barracks deriving from legionary fortresses have been given in the graphs as legionary barracks and all barracks deriving from auxiliary forts have been given as auxiliary barracks. Furthermore they are so referred to in the text. All barracks of the Augustan/Tiberian period have been counted as legionary.

Each building deriving from a fortlet also has been treated as a separate entity. Thus those pairs of buildings which apparently come together to form one centurial barrack in the manner outlined by Breeze (1974c; 1977c) will not be considered as such until Chapter 4. Included in the fortlet section are the barracks from the milecastles of Hadrian's Wall and the barracks from continental *Kleinkastelle*.

The evidence usually can be assigned to period without difficulty. On the few occasions where the construction of a building may cover two periods, the evidence from that building has been included in both periods in the graphs relating to the individual periods, but only once in the graphs representing the total evidence. Included in the evidence for the third century are all the buildings which reflect an earlier period but which have undergone third-century or later reconstruction (eg Lauriacum, Carnuntum); where recent excavation has clarified earlier plans, only the recent results have been used (eg Housesteads). The new style 'chalet' barracks of the late third century (and those of a slightly earlier date revealed at Chesterholm (Bidwell, 1985)) have not been included.

This work does not consider in detail evidence from the provinces to the east of the Mediterranean.

It is the purpose of this first chapter to compare the barracks (and their principal constituent elements) according to their derivation from fortress, fort or fortlet and according to their date and province.

The Buildings

Conformation

Figure 1 displays the incidence in the total sample of the Building Types of all the buildings which have been interpreted as barracks, stables or stores/workshops in the fortresses, forts and fortlets (for definition of the Building Types see Figure A). Large manufacturing buildings from the fortresses, *horrea* and *valetudinaria* have not been included.

It is apparent that the most important Building Type overall is Type A, followed by Types B, O, Jx, H, J, N and G. Type A is the best known form of barrack with projecting officers' quarters and a veranda usually (but not

necessarily) in front of the men's quarters. In fact the pre-eminence of this Type is reinforced by the considerable presence of Type Jx. Type Jx represents the partial remains of a building which, if fully known, could be either of Type A, Type B or Type J. But the fact that these examples usually are found with evidence for the presence of a veranda makes it more likely for the full building to have been of Type A rather than of Types B or J, since these latter are only very rarely found with verandas while they are a usual feature of Type A buildings. Type B constitutes a clearly-defined barrack-form in which the officers' quarters do not project in front of the line of the men's quarters. The difficulty of a considerable proportion of the evidence is reflected in the large number of examples of Type O. Type O buildings are those which the excavations have been able to define only as rectangular buildings of some kind.

The vast majority of the buildings in Figure 1 is made up of barracks. The number interpreted as stables or stores is relatively very small, but it is one of the problems of the subject that buildings interpreted as stables or stores/workshops may take the same building form as those interpreted as barracks; thus the common barrack forms of A, B, H, J and Jx have all sometimes been interpreted as stables or stores. With 36 examples, Type O has the highest total of buildings interpreted as stables/stores, but it has been pointed out that it is difficult to define the full nature of Type O buildings. More significant is the interpretation of all 23 of the Type S buildings and all four of the Type T buildings as stables or stores. Type R buildings have 16 so interpreted in an overall total of 45 (nearly all from forts), while with 14 and ten examples respectively Types H and N are the only ones remaining at all frequently interpreted as stables/stores. Stables and stores/workshops will be discussed in Chapter 5.

When the distribution of these Building Types between fortresses, forts and fortlets is considered it is clear that there is a great contrast between the three. Type A is the most important form in fortresses and forts, but it features only very little in fortlets. Type B on the other hand hardly appears at all in fortresses but is almost as significant as Type A in forts. Again it features only little in fortlets. Types Jx, J and G are evenly balanced between the fortresses and forts although Type J is favoured in the fortlets. Not surprisingly, Type O is much more significant in forts and fortlets than in fortresses and it is joined in this by Type N which is a building of very similar form but which has a mass of internal walls which have not been disentangled by the excavator. In contrast, Type H is a well-defined form and has a significant presence in forts while being the most important single form in the fortlets. It is hardly ever found in fortresses while its relatively simple form may be considered well-suited to the less sophisticated buildings of the fortlets. But Type X is the most characteristic barrack form in the fortlets to which its incidence is almost entirely confined.

When the Types of those buildings interpreted as barracks are considered from period to period and from province to province and according to the 'corrected' figures rather than the total sample (Figs 1.1 - 1.8), it is clear that little break in the pattern is revealed. Most notable is the performance of Type B in the Antonine period where it outnumbers Type A. This is the result of the large number of examples from forts in *Britannia*, many on the Antonine Wall. Otherwise the picture remains remarkably consistent although the prevalence of Type X in the fortlets of *Germania Superior* and *Germania Inferior* should be noted.

Overall Dimensions

Figure 2 illustrates the overall dimensions of the buildings discussed above. The graph does not present the measurements of every building known, but rather those of every different example from each fortress, fort and fortlet. While buildings from the same site often have the same dimensions, those from different sites very rarely do. Nevertheless measurements from different sites sometimes coincide and the number of such occasions (nearly always 2 but in two examples 3) is marked next to the point. Thus the graph displays not the intensity of the total sample at any one place, but rather the full range of the dimensions of the buildings so far known. It should be noted that for reasons of practicality it was found best to use different scales for the lengths and widths. Thus the relative differences in the lengths of the buildings are twice as great as at first sight appears; nevertheless the patterns remain clear.

Figure 2 shows broadly three principal concentrations. The first is to be seen between the lengths of 70 and 90 m and concentrates in the much more narrow width range of 10 to 13 m. The second is more diverse with lengths of 30 to 52 m and widths of 4 to 13 m. Within this group particular concentrations may be seen at the lengths of 40 m and from 46 to 50 m. The third is considerably more diffuse, loosely distributed between the lengths of 4 and 26 m and between the widths of 3 and 12 m.

These concentrations admit very great variation yet it is clear that they accord, in the main, with the their provenance from fortress, fort or fortlet. But there are many exceptions to this rule.

The pattern established by the barracks is clear but that revealed by the ancillary buildings, ie stables, stores and workshops, is more varied. Examples of such buildings from fortresses are few. Many of those from forts accord with the size-range of the auxiliary barracks, but there is a considerable number of such buildings smaller than the auxiliary barracks approximating rather to the size of the fortlet barracks. The relationship between the fortlet barracks and fortlet ancillary buildings is different, the ancillary buildings being in general considerably smaller than the barracks.

When the distribution of the barracks is considered according to period and province (Figs 2.1 - 2.7), it can be seen that the three major concentrations are present throughout the periods under consideration. Even the relatively small number of examples from the Augustan/Tiberian period conforms to the overall pattern. This pattern is first firmly established in the Claudian/Neronian period and these three concentrations achieve their greatest intensity in the Flavian period after which time the auxiliary concentration admits greater variety.

Throughout all periods the three concentrations reflect their provenance from fortress, fort or fortlet. Isolated legionary examples are not found in the auxiliary group after the Flavian period, but occasional auxiliary examples occur in the legionary group at all times. Again in all periods there is some overlap between the auxiliary and fortlet groups.

The legionary barracks (disregarding the untypical evidence of the barracks of the double-strength first cohorts) present in every period a much greater variety of lengths than widths. Already they cover their greatest

range of sizes in the Claudian/Neronian period and diminish in the Flavian to a range which remains fairly constant in the subsequent periods.

In contrast, the auxiliary barracks, while showing a similar variation in lengths, have a much greater range of widths. It is clear that they are considerably smaller in the Claudian/Neronian than in subsequent periods. They are at their largest overall in the Flavian and Antonine periods and in both of these periods have subsidiary concentrations of small barracks with lengths of c 31 and c 15 - 28 m respectively. This latter group is associated with a group of large fortlet barracks in the Antonine period. Some unusually wide auxiliary barracks are to be seen in the Severan period.

In all periods, with the necessary exception of the Augustan/Tiberian, the largest amount of information comes from *Britannia*. In spite of this it is possible to see that the evidence from all the provinces covers very much the same range although there are minor variations. Most of the notably small legionary barracks in the Claudian/Neronian and Flavian periods derive from *Britannia*. This is true also of most of the small auxiliary barracks in the Claudian/Neronian period as of the two subsidiary auxiliary groups mentioned for the Flavian and Antonine periods. *Germania Superior* and *Raetia* provide a number of large auxiliary barracks in the Flavian period while *Dacia* is the provenance of the wide Severan auxiliary barracks. In the Hadrianic/Trajanic and Severan periods there are concentrations of small fortlet barracks; these derive in the main from the milecastles of Hadrian's Wall.

The ancillary buildings from auxiliary forts display a more considerable variation according to period and province. In the Claudian/Neronian period there is a group whose lengths are considerably greater than those of the barracks for the period. They derive from *Britannia* (Hod Hill). In the Trajanic/Hadrianic period there is a strong concentration of small ancillary buildings very much in the range of the fortlet concentration and the provenance for many of these buildings is *Germania Superior*. Similarly, in the Antonine period, there is a group of ancillary buildings rather larger than those mentioned above but still smaller than contemporary barracks. *Britannia* provides the provenance for many of these buildings.

The number of ancillary buildings from fortlets is too few to make useful comment possible.

It is apparent from the above graphs that there is no very clear correlation between the lengths and widths of the barracks. This is confirmed in Figure 3 which expresses the proportions of the barracks when their overall lengths are divided by their widths. The total barrack sample is given. Although there is some overlap between them, the proportions of the legionary, auxiliary and fortlet barracks are very different, but most striking is the wide range of values for each provenance. The main legionary concentration is between 6,0 and 8,0 but shows no peak within that range; the auxiliary distribution is more diffuse and again reveals no clear peak within the main concentration from 4,0 to 6,75. From this it may be concluded that the barracks were not built according to set length and width proportions. Certainly the evidence shows no clear connection with the same proportions which can be extrapolated from Hyginus' provision for the marching-camp. This gives ratios of 1 : 5 (for eight *contubernium* tents) or 1 : 6 (for ten *contubernium* tents).

Areas

Figure 4 demonstrates the overall areas taken both by the total sample and the amended sample of the barracks and ancillary buildings (excluding the area of verandas where present). The graph shows three major groupings. There is a concentration of small buildings with areas of between c 25 and 100 sq m and a further concentration of large buildings with areas of between c 650 and 800 sq m, but the great mass of the evidence falls between c 125 and 525 sq m. Given the evidence of the previous section it is no surprise that these three concentrations correspond in general to their provenance from fortress, fort and fortlet.

It is noticeable that legionary examples are represented right down to the lowest values and that some auxiliary examples are as large as 1200 sq m and are absent only from the very highest values of over 1300 sq m. The fortlet buildings cover a considerable proportion of the auxiliary values.

The legionary barracks present some very large examples of over 1300 sq m but concentrate mainly between c 675 and 850 sq m. The auxiliary barracks range principally from c 125 to 550 sq m but achieve their greatest concentration over c 325 sq m. The fortlet barracks have values as high as c 450 sq m but concentrate from c 25 to 100 sq m. The amended sample emphasises the spread of the legionary values and reduces the significance of the legionary concentration between c 700 and 800 sq m.

The ancillary auxiliary buildings cover the range of the principal auxiliary group but extend to the lowest values and concentrate in the lower half of the auxiliary range. The fortlet ancillary buildings are found only up to c 100 sq m, certainly smaller than many of their corresponding barracks.

Considered according to period and province (Figs 4.1 - 4.7), the pattern is very much that of the previous section. The polarisation of the barrack concentrations is to be seen from the Augustan/Tiberian period but is most marked in the Flavian. The Trajanic/Hadrianic period is that where there is the least overlap between the legionary, auxiliary and fortlet values.

The relatively small size of the auxiliary barracks in the Claudian/Neronian period again emerges and it is clear that *Britannia* rather than the other provinces provides their provenance. Again it is clear that most of the small auxiliary values in the Flavian and Antonine periods are from *Britannia*, but that in the Trajanic/Hadrianic period, *Germania Inferior*, *Germania Superior* and *Raetia* also provide small auxiliary barrack values as well as *Britannia*. On the other hand a notable group of large auxiliary values are to be found in *Germania Superior* in the Flavian period.

It should be noted that each concentration covers a very large range of values and the patterns here portray even less uniformity than in the previous section. It will be shown that area measurements of elements of the barrack consistently display less pattern than linear measurements. This demonstrates that the buildings are likely to have been set out according to linear rather than area considerations. This suggests that barracks did not have theoretical areas to which they had to conform, but rather were built to fill a given space according to proportions which could be measured on the ground.

Officers' and Men's Quarters

Officers' Quarters

It must be considered whether the component parts of the barracks demonstrate the same trends. From the Augustan/Tiberian period it is possible to recognise the area set aside for the centurions or decurions in nearly all the barracks.

Figure 5 displays the areas of the officers' quarters. As is to be expected the areas concentrate within a narrower range than those of the whole barrack. Most of the examples fall in the range of c 25 to 375 sq m. In contrast to the previous Figures there are within this range just two principal peaks, at c 50 to 150 sq and at c 250 to 325 sq m. A subsidiary peak at c 175 sq should also be noted.

The two principal peaks accord with their provenance from fortresses and forts, but it is clear that there is considerable overlap between them. It is apparent that the examples from the fortlets do not form a separate concentration but rather concentrate in the lower half of the auxiliary values. The amended sample much reduces the significance of the legionary concentration on c 300 sq m.

Examination according to period and province (Figs 5.1 - 5.7) shows that the concentrations in Figure 5 begin in the Augustan/Tiberian period and continue throughout the subsequent periods.

The range covered by the legionary examples remains fairly constant throughout although it can be seen that the lowest legionary values derive from *Britannia* in the Claudian/Neronian and Flavian periods. The auxiliary examples show a clear concentration of low values in the Claudian/Neronian period for which *Britannia* provides the provenance. Again the auxiliary values concentrate at a slightly higher point in the Flavian than in the other periods as the consequence of a number of large examples from *Germania Superior* and *Raetia*. The slightly larger than average auxiliary values from *Raetia* continue into the Antonine period. The range covered by the fortlets also remains fairly constant although the Antonine period has a group of relatively high values whose provenance is *Britannia* and *Germania Superior*.

The degree of overlap between the legionary and auxiliary examples varies considerably. It is at its greatest in the Flavian period, diminishes considerably in the Trajanic/Hadrianic and disappears in the Antonine only to return in the two remaining periods. Given the fairly large number of examples for the Antonine period, this distinction between legionary and auxiliary should be noted. In every period the examples from the fortlets are to be found in the lower half of the range covered by the auxiliary forts although the large fortlet examples from the Antonine period extend two thirds of the way through the range.

Men's Quarters

Figure 6 displays the areas of the men's quarters. This Figure shows several important differences to that of the officers' quarters. The range of sizes is considerably greater, but this might well be expected considering the larger areas concerned. Furthermore the main concentration

covers the very wide range of c 175 to 525 sq m with only one central peak at c 275 sq m. There is one minor concentration at c 75 - 125 sq m.

Although the legionary and auxiliary examples group at the higher and lower ends respectively of the main concentration, their values overlap much more than do those of the officers' quarters. This may reflect a greater standardisation in the officers' than the men's quarters. On the other hand the fortlet examples concentrate more exclusively among the smallest values than did their officers' quarters; this again is to be expected if their officers' quarters were following auxiliary barrack norms. The amended sample reveals less significant difference here although it removes the subsidiary legionary concentration on c 675 sq m.

Examination of the men's quarters according to period and province (Figs 6.1 - 6.7) shows again that the concentrations revealed in Figure 6 are to be seen already in the Augustan/Tiberian period and continue through the subsequent periods. On the other hand there is much greater variety in detail than for the officers' quarters.

The legionary values in the Claudian/Neronian period concentrate below the average legionary point. This is caused by a group of low legionary values from *Britannia*. Exactly the converse is true in the Flavian period where the legionary concentration at a higher than average point is the consequence of high values from *Britannia*. The evidence from the other provinces is much more constant until the influence of Lambaesis in the third century.

The evidence from *Britannia* is again the cause of the auxiliary values concentrating below the average point in the Claudian/Neronian period. In contrast the auxiliary values concentrate at their highest point in the Flavian period as the result of large examples from *Germania Superior* and *Raetia*. Once more *Britannia* is responsible for many of the low auxiliary values in the Trajanic/Hadrianic and Antonine periods but it should be pointed out that the province also has examples of average and larger than average size. The highest fortlet values are to be found in the Antonine period and derive from *Britannia* and *Germania Superior*.

The overlap between legionary and auxiliary values is apparent in the Claudian/Neronian period and reaches its high point in the Flavian. It declines in the Trajanic/Hadrianic and is hardly present in the Antonine and subsequent periods. The overlap between the fortlet and auxiliary barracks is greatest in the Antonine period.

Length Proportions (Officers' and Men's Quarters)

Figure 7 displays the percentages of the overall barrack lengths taken up by the officers' quarters. The graph shows three major concentrations: 20 - 26 % (within which there is a clear peak from 24 to 26 %), 28 - 29 % and 31 - 35 %. There are two further smaller concentrations at 14 - 17 % and at 43 - 45 %. The three major concentrations imply building proportions of 1 : 3; 1 : 2,5 and 1 : 2.

The legionary evidence concentrates mainly between 31 and 36 %, but examples are found throughout the total range and there is a significant subsidiary legionary concentration on 25 %. In contrast, the auxiliary evidence examples are found mainly between 20 and 29 % and they peak

strongly at 24 to 25 %, although again they are found throughout the total range. The evidence from the fortlets shows no very clear pattern but tends to concentrate among the higher percentages. This is to be expected in the light of the relatively small size of their men's quarters. The amended sample reduces the impact of c 37 % from the fortresses.

When the same evidence is considered according to period and province (Figs 7.1 - 7.7), it is apparent that the concentrations of Figure 6 are not yet present in the Augustan/Tiberian period when there is an emphasis on figures below 20 %. The concentrations are certainly discernible in the Claudian/Neronian period and achieve their greatest emphasis in the Flavian, thereafter to diminish.

The concentrations for the Claudian/Neronian period would be much more apparent were it not for the evidence from *Britannia*. Here there are several legionary examples with low percentage values while there is a number of auxiliary examples with much higher values. This evidence contrasts with that of the other provinces which corresponds much more with the overall norm. These differences continue into the Flavian period. In contrast to the evidence from the other provinces the legionary evidence from *Britannia* shows a marked concentration at c 25 %. Also present is a number of auxiliary values above c 38 % although much of the auxiliary evidence from *Britannia* now agrees with the lower values in the other provinces. In the Trajanic/Hadrianic period the evidence from *Britannia* reflects much more the overall norm. The legionary concentration on 25 % has gone and the auxiliary evidence concentrates between 20 and 26 %. But now the auxiliary evidence from all the other provinces can be seen to be much more diffuse ranging from c 12 to 38 %. Much of the evidence for the Antonine period comes from *Britannia* but it can once more be seen to be atypical for there is a considerable presence of auxiliary evidence in the higher values over 30 %. In the Severan period the evidence, as far as it is known, reverts to the overall pattern while in the third century legionary evidence is diffuse with a number of examples below 30 %.

Thus *Britannia* is notable for low legionary percentage values in the early periods and for high auxiliary values in several periods.

Area Proportions (Officers' and Men's Quarters)

Figure 8 displays the percentages taken by the officers' quarters of the total living areas of the barracks (excluding the area of the veranda where present). The pattern which emerges is much less clear-cut than that of the length percentages. Two principal concentrations are apparent, from c 23 to 32 % and from c 37 to 44 %. But within these groups there is a number of subsidiary concentrations and many values fall outside them.

The two major concentrations correspond in the main with their provenance from fortress and fort, but while only a few legionary examples fall in the lower concentration, auxiliary presence in the higher percentage group is much more common. In contrast to Figure 6, there are few legionary examples which fall below 30 %, on the other hand many auxiliary examples are to be found above 33 %. The prevalence of the legionary barracks among the higher values is to be explained by their Type A building form with projecting centurions' quarters. It has been shown that this Type is not so prevalent in the auxiliary barracks. The evidence from the fortlets ranges throughout the graph without showing any particular pattern.

Figures 8.1 - 8.7 again reveal considerable variation according to period and province. The Augustan/Tiberian period shows nothing of the overall pattern of Figure 8, but this emerges in the Claudian/Neronian period and is most emphatic in the Flavian. Thereafter the evidence is spread very evenly between c 16 and 40 % until the concentrations are again to be seen in the Severan period.

It is not surprising that, given the evidence of the previous section, the balance of evidence from *Britannia* should again be different to that from the other provinces. In the Claudian/Neronian period *Britannia* has a number of very high auxiliary values and although these are not so prevalent in the Flavian period, at this time the legionary values from the province concentrate at a lower point than those from the other provinces. Again in the Trajanic/Hadrianic period the auxiliary evidence from the other provinces is more diffuse than that from *Britannia*. Much of the evidence in the Antonine period is from *Britannia* and it is predominantly auxiliary. It ranges much more widely range than in the previous period.

The best explanation for the relatively diffuse nature of this evidence is that the total area of the men's quarters in relation to that of the officers' quarters was not the underlying criterion for the planning of the barracks, but rather their linear relationship on the ground provided the basis for their arrangement.

The *Contubernia*

***Contubernium* Totals**

The division of the men's quarters into *contubernia* is often by no means regular, but in many examples, even when full evidence is lacking, it is possible to make a reasonable estimate of their number. For purposes of comparison those first and end *contubernia* which sometimes take a different form to the other *contubernia* of the same barrack are here both counted as single *contubernia*. Their forms are defined in Figures C and D.

Figure 9 shows the barrack *contubernium* totals. Most examples fall within the range of 7 to 13 *contubernia*; within that range there is a strong peak on 10 and a subsidiary lower peak on 8. Most legionary barracks have between 11 and 13 *contubernia*. On the other hand, 10 is the total most often found in the auxiliary barracks although there are many examples with 8 or 9. Some fortlet barracks have up to 7 *contubernia* but 3 is the most common total: the way in which pairs of these barracks combine to form the accommodation for a century will be discussed in Chapter 5. The amended sample reduces the significance of the concentration on 12 *contubernia* in the fortresses.

The range of totals covered by the legionary barracks appears to be present even from the Augustan/Tiberian period, although at this time there is an emphasis on large totals over 13. Certainly the legionary emphasis on totals of 11, 12 and 13 is present in the Claudian/Neronian period and continues with little variation throughout subsequent periods. Furthermore there appears to be little variation from province to province (Figs 9.1 - 9.7).

On the other hand there is considerably more variation among the auxiliary barracks. There is a concentration of low auxiliary totals in the

Claudian/Neronian period which is largely the impact of the evidence from *Britannia*. In the Flavian period the auxiliary evidence groups at the high end of its total range and this is the consequence of a series of high totals from *Germania Superior* and *Raetia* and an increase in the totals from *Britannia* from the previous period. Thereafter the auxiliary pattern reverts to the norm although small totals may be seen in *Germania Superior* in the Trajanic/Hadrianic period and a strong emphasis on the total of 8 appears in the Antonine period, largely as a result of evidence from *Britannia*.

The number of examples from fortlets is not sufficient to be able to discuss any patterns in their behaviour, but it is noticeable that their lowest totals are most marked in the Trajanic/Hadrianic, Antonine and Severan periods. To some extent this is the influence of the evidence from the milecastles of Hadrian's Wall.

The evidence of the *contubernium* totals thus reflects generally that presented above. Although precise correlations cannot be made, larger men's quarters have more *contubernia*. These relationships will be investigated further in Chapters 2 and 3.

***Contubernium* Areas**

Figure 10 shows the living space of the individual *contubernia*, that is clear of all walling internal and external. The size of the *contubernia* of the same barrack can vary considerably, but the evidence here is drawn from what may be considered to be the single norm for each barrack.

In contrast to much of the evidence presented above, Figure 10 shows only one main concentration, from c 14 to 29 sq m. The peak is at c 21 to 25 sq m. It is striking that both the legionary and auxiliary examples are to be found in fairly equal proportions throughout this very broad principal group although the auxiliary *contubernia* are a little more in evidence among the lower values and the legionary among the higher. Much of the evidence from the fortlets reflects that from the forts. Outside the main concentration the largest examples are drawn both from legionary and auxiliary contexts but never from fortlets. The smallest examples are nearly all from auxiliary and fortlet contexts. Thus it is clear that provenance is no secure guide to the size of *contubernium*. The most important effect of the amended sample is to remove the legionary peak on c 33 sq m.

Comparison according to period and province (Figs 10.1 - 10.7) shows that the the Augustan/Tiberian evidence concentrates at a noticeably lower point than that of the subsequent periods. In the Claudian/Neronian period, the pattern begins to match that of the overall norm, in spite of both legionary and auxiliary values from *Britannia* which are markedly lower than those of the other provinces. In the Flavian period the evidence concentrates within its narrowest range overall and the auxiliary *contubernia* have their highest values and very much match the legionary for size; those from *Britannia* are notably higher than in the previous period although they still concentrate at a slightly lower point than those of *Germania Superior* and *Raetia*. The auxiliary evidence covers a wider range in the Trajanic/Hadrianic period which is the consequence of low values from *Britannia*, *Germania Inferior* and *Germania Superior*. In general the auxiliary evidence has become much more diffuse and this trend continues in the Antonine period, particularly

in *Britannia*. In the Severan period, there is little evidence from *Britannia* but that from the other provinces shows the few auxiliary examples covering almost their whole range. As usual the largest legionary examples are found in the third century.

Total Living Space

The product of the number of *contubernia* and their internal area (including adjustments for special first and end *contubernia* where present) is the total living space available in the men's quarters of the barrack (Fig 11). Once more only one principal concentration can be seen from c 140 to 300 sq m. Clearly this is a very great range and it is surprising that the legionary and auxiliary evidence overlaps so considerably throughout in spite of the larger number of *contubernia* of the legionary barracks. Given their small *contubernium* totals, the presence of the evidence from the fortlets at the bottom end of the scale is not surprising. The amended sample much reduces the significance of the peaks on c 250 and 290 sq m in the fortresses.

Examination according to period and province (Figs 11.1 - 11.7) shows that the evidence for the Augustan/Tiberian period accords more with the overall pattern than in the previous section. In the Claudian/Neronian period the legionary concentration achieves already the norm which it maintains until the large values of the third century, although the impact of the double-strength first cohort barracks can be seen in the Flavian period.

The auxiliary evidence for the Claudian/Neronian period shows low readings which derive almost entirely from *Britannia*. All of the auxiliary examples in the Flavian period begin at a much higher point, form a tighter group and concentrate at their highest mark. This changes considerably in the Trajanic/Hadrianic period where the auxiliary readings again become much more diffuse and include many low values. Much of the impulse for this derives from *Britannia*, but also from *Germania Superior* and the lower Danube provinces. The auxiliary position changes very little in the Antonine period where much of the evidence comes from *Britannia*. In the Severan period, the auxiliary evidence is even more diffuse.

Papilio/Arma Proportions

Although the subdivision of the *contubernia* into *papilio* and *arma* is not present in all forms of barrack (see Figure A), it occurs early and often enough to be considered a basic element. The proportions nearly always remain constant throughout the same barrack and only occasionally is it difficult to judge which way the barrack is facing.

Figure 12 shows that the *papiliones* usually take the greater part of the *contubernia*, although there is a significant minority of barracks where the *arma* are marginally larger. The evidence covers the fairly wide range of c 42 to 72 %. Within this range there is a concentration from c 58 to 66 % implying the building proportions of 2 : 1; much more emphatic is the peak on 50 % demonstrating the proportions of 1 : 1. These proportions may have structural implications for the barracks and these will be discussed in the later Chapters. The amended sample has little impact on the overall shape of the graph.

There are considerable differences between the legionary and auxiliary evidence. It is the legionary barracks which provide much of the impetus towards the concentration on c 66 % and although there is a subsidiary legionary peak on 50 %, the evidence for this latter proportion is predominantly auxiliary. Evidence from auxiliary barracks continues to be well represented up to 72 % but does not show any marked concentration at 66 %. Where the *arma* are larger than the *papiliones* it is nearly always in auxiliary barracks. The fortlet evidence very much follows that of the auxiliary barracks but hardly features above 66 %.

Examined according to period and province (Figs 12.1 - 12.7) it can be seen that the legionary evidence varies very little but rather mirrors the range of the legionary distribution in Figure 12. The legionary evidence from *Germania Inferior* in the Flavian period concentrates at a slightly higher point than usual, and that from *Britannia* in the Trajanic/Hadrianic period at a slightly lower point than usual, but these distinctions are marginal.

The evidence of the auxiliary barracks is much more varied although it covers the full range in all periods where there is sufficient evidence. In the Claudian/Neronian period in all provinces it covers the range from c 50 to 76 % evenly. The Flavian period sees the beginning of the emphasis on 50 % in all provinces but particularly in *Britannia* and *Germania Superior*. This trend continues in the Trajanic/Hadrianic period under the influence of the evidence from *Britannia* and *Raetia*, but this period also sees the largest number of *papiliones* under 50 %, most of them in *Britannia*. The proportion of 50 % reaches its apogee in the Antonine period, again most emphatically in *Britannia* where the emphasis on values below 50 % is slightly reduced from the previous period. The evidence for the Severan period is much reduced, but it continues to show the prevalence of 50 %. The connection of this proportion with barracks of Building Type B will be explored in Chapter 3.

The evidence from the fortlets is insufficient to speak of trends, but when present the *papiliones* cover a wide range in each period.

Conclusions

The evidence presented above shows that the Roman Army barrack achieved very early in its life (certainly from the Claudian/Neronian period and in many respects as early as the Augustan/Tiberian) the characteristic make-up which it was to maintain through the next three centuries.

Throughout this period, in spite of temporal and regional variations, it is possible to perceive a balance in the component parts of the barrack; thus large barracks tend to have large officers' quarters, large men's quarters and large *contubernia*, similarly small barracks small. This being said, the officers' quarters do reveal a greater consistency than other parts of the barracks and this may be of value for interpretation.

In spite of the presence of a notable group of small legionary and auxiliary barracks in *Britannia* in the Claudian/Neronian period and of some large auxiliary barracks in *Germania Superior* and *Raetia* in the Flavian and Trajanic/Hadrianic periods, perhaps the most striking feature of the evidence is the very lack of differentiation from period to period and from province to province; rather the evidence covers the whole range throughout.

Thus differences between the barracks cannot be explained simply in terms of period and province, but rather imply functional differences.

It was to be expected that evidence from the auxiliary forts and the fortlets would often agree; rather more surprising is the overlap in the auxiliary and legionary evidence. This takes place to a much higher degree than can be explained by the presence of legionaries in auxiliary forts or of auxiliaries in legionary fortresses. Thus hard criteria for the identification of barracks inhabited by legionaries or auxiliaries cannot be laid down but certain factors such as general size or *contubernium* totals may form the basis of a presumption that a barrack was built for legionaries or auxiliaries. More detailed argument will have to proceed from this point.