THE PRATA LEGIONIS AT CHESTER

by D. J. P. Mason

INTRODUCTION

An important though rarely discussed aspect of Roman legionary fortresses is the fact that every *castra* had attributed to it an adjacent tract of land which came under the direct control of the resident legion. As a citizen body under the control of a Roman magistrate (in fact a deputy or *legatus* of the most powerful of magistrates, the emperor) a legion could possess a 'territory' of its own and, for administrative purposes, be regarded as a *respublica* in just the same way as a chartered town or a formally constituted native *civitas*, as is demonstrated by instances where the boundaries of the *territoria* of towns or tribal *civitates* run with those of army lands implying equivalent, if not superior, status (e.g. *I.L.S.* 2454, 2455, 5969). Territories were also allotted to auxiliary units (e.g. *R.I.B.* 1049 from Chester le Street), though it is likely that final authority over such areas rested with the legate of the nearest legion, a situation which not only stemmed from the fact that the *auxilia* were both in theory and in practice auxiliaries to the legions but also reflected their origin in the period when the legions could be contrasted as wholly citizen bodies with the overwhelmingly peregrine *auxilia*.

Although the existence of 'legionary lands' is attested in various parts of the empire the surviving epigraphic evidence is not only unevenly distributed both geographically and chronologically but is also comparatively small in quantity, the number of relevant inscriptions known so far totalling less than two dozen. All of these come from provinces other than Britain and so it is perhaps understandable why the few detailed studies of this subject carried out to date have been undertaken by continental scholars (Schulten, 1894; Egger, 1951; Mócsy, 1953; 1967; 1972; von Petrikovits, 1960, 63-76; Rüger, 1968, 51-55 and 72-74).

The earliest epigraphic evidence for a legionary 'territory' consists of a collection of inscribed marker-stones from Northern Spain dating to the period 23 B.C.-A.D. 14 which were set up to define the boundary separating the domains of *legio IIII Macedonica*, whose base probably lay at Herrera del Pisuerga (Jones, 1976, 49-50), from the lands of the neighbouring towns of *luliobriga* and *Segisamo* (*I.L.S.* 2454, 2455, 5969, 5970; *A.E.* 1946, nos. 11, 17, 18 and 19; Garcia y Bellido, 1956, nos. 1-14; Jones, 1976, 65-6). Apart, of course, from the name of the individual town the phraseology employed on these stones is consistent throughout — 'Ter(minus) August(alis) dividit prata leg(ionis) IIII et agrum Iuliobriga'. The findspots of these marker-stones (Garcia y Bellido, 1961, 118, fig. 1) show

that the boundary, which delimited the eastern side of the legion's 'territory', ran for a distance of at least 56 km. on an approximately north-south alignment some 10 km. out from the legionary fortress. Thus, *legio IIII Macedonica* exercised direct control over an area of at least 560 sq. km.

The only other first century legionary fortress where the garrison's 'territory' is attested epigraphically is *Burnum* (Suplja Crkva, Yugoslavia). The evidence again consists of an inscribed boundary-marker (*I.L.S.* 5968) found 18 km. south-east of the fortress. This had been set up c. A.D. 100 as one of a series defining the boundary between the lands of *legio IIII Flavia* and the forest of one F1. Marcus. This stone is of particular interest because in addition to giving us some idea of the extent of the area under this legion's direct control it also demonstrates that such lands were not automatically ceded to the civil authorities when the garrison departed for *Burnum* had ceased to function as a military base in A.D. 86 (Wilkes, 1969, 103-5 and 459).

On all the boundary markers from Hispania Tarraconensis and that from Dalmatia the area subject to legionary control is consistently referred to as 'prata'. As Professor András Mócsy has suggested (1967, 211), the regular use of this term (which means pasture as opposed to cultivated land) implies that the prime, but not necessarily the sole, purpose of such areas originally was the provision of grazing for a legion's animals. As well as a 120 strong contingent of cavalry with its mounts and remounts every legion, especially in the early Imperial period when the disposition of the legions was still subject to frequent change, retained a considerable number of draught and baggage animals. Each tent group (contubernium), for example, was provided with a mule for carriage of its equipment; 60 per cohort, a total of at least 640 per legion. In addition, there were the oxen needed for pulling the heavy wagons in the baggage-train as well as a number of animals kept strictly for sacrifice during the celebration of official festivals and anniversaries (cf. Breeze, 1982, 150). Furthermore, there is evidence to suggest that the legions, as one might expect in this early period, maintained a plentiful stock of meat 'on the hoof'. Tacitus, for example, in his description of the situation on the German frontier in A.D. 58 relates how 'The Frisians . . . (moved in and) settled in fields that were empty and set aside for the use of the soldiers' (Annals, XIII, 54). A few sentences later, he reports a speech supposedly made by Boiocalus in defence of the Frisians' intrusion which includes the line 'Why does so much land lie idle for the occasional introduction of the flocks and herds of the soldiers?' (Annals, XIII, 55). These remarks might also suggest that, as a safeguard, the military sometimes appropriated an area of land greater than that which they actually needed. Clearly, the number of animals maintained by a legion in the early Imperial period could easily have totalled in excess of several thousand (supervision of a legion's herds and responsibility for the quality of meat brought into the camp appear to have been the duties of soldiers known as pecuarii - C.I.L. III 10428 and 11215; VIII 2553; XIII 7695). On the other hand, even if one caters for the largest of herds a legion might have kept by itself and makes allowance for the possible scarcity or poor quality of the available pasture it is evident from their considerable extent that the provision of grazing land was not the sole purpose of these early *prata legionum*. We must assume such areas were also intended to furnish a legion with as many as possible of the natural resources and commodities — such as water, clay, timber and stone — as it was likely to require. In addition, these *prata* must surely have included a large area where the troops could rehearse large-scale manoeuvres and practise the construction of temporary camps and siege-works.

The growing tendency from the mid-first century onwards for legions to become more or less permanently stationed in one place led to a gradual but fundamental change in the character of their prata. Whilst they continued to perform their original functions the military lands came to support an ever increasing number of civilians, the majority living in the extramural settlement immediately beside the fortress (canabae legionis) with the remainder dwelling in farmsteads and villages on the surrounding area. As the *canabae* settlements grew and prospered during the late first and early second century they developed quasi-municipal corporations, appointing officials in the same numbers and with the same titles and duties as those which existed in the truly autonomous Roman communities such as coloniae and *municipia*, and these appear to have gradually undertaken full responsibility for the civil aspects of the administration of a legion's domains though ultimate authority probably continued to reside with the legate (Mócsy, 1967; 1972; 1974, 125-9 and 139-42; Vittinghoff, 1968; 1971; Mason, 1984, 228-48). Although epigraphic references to legionary lands continue after the middle of the second century more often than not the area controlled by a legion is now described as its territorium rather than prata. Thus, on an inscription from Troesmis (Iglita. Bulgaria) dated to A.D. 162 (Weiss, 1913, col. 209-10) which records the erection by the 'veterani et cives Romani' resident in the canabae of a temple on land belonging to legio V Macedonica the latter is referred to as 'territorium leg (ionis) V Macedonica' (Dorutiu-Boila, 1972, 49-52). Similarly, a slightly later inscription (I.L.S. 7111) from Castra Regina (Regensburg, Germany) mentions one Aurelius Artissius who held the civil post of 'aedilis territorii contributi et canabarum Reginensium' that is 'aedile of the Castra Regina canabae and the allotted territory', the latter being the area under the ultimate control of the garrison, legio III Italica (Vittinghoff, 1971, 306-7). It may be that this change in terminology occurred because the use of the term *prata* to describe an area containing a civil settlement as large as a fair sized town together with numerous rural establishments seemed increasingly anachronistic. On the other hand, we cannot be entirely certain that these later territoria were the direct equivalent of the earlier prata legionum. It is possible, for example, that with a burgeoning civilian population on their lands the legions felt it necessary to subdivide their prata, reserving part - the territorium - solely for military installations.

In the absence of reliable epigraphic evidence for the size of the prata legionis

at the majority of legionary fortresses researchers have experimented with other methods of trying to determine the extent of such areas. In a number of cases the idea has been propounded that the distribution of buildings in the hinterland of a fortress which have stamped legionary tiles incorporated in their fabric can indicate the extent of the prata, those who subscribe to this theory maintaining that the tiles, at those sites where they occur in significant numbers, can only have been supplied by the legion for use in buildings erected with the latter's permission and/or aid. By applying this method at Vindonissa (Windisch, Switzerland), a legionary base from c. A.D. 16 to c. A.D. 100, Victoria von Gotzenbach (1963), drawing upon and refining the earlier work done by F. Staehelin (1948, 136-7, 176 and 200), has estimated its prata covered an area of some 1,350 sq. km. (see also Frei-Stolba, 1976, 366-77). While some of the buildings considered by Gotzenbach are clearly official installations such as posting-houses (mansiones) the majority are isolated farms and it is suggested these were the homes of tenantfarmers holding leases from the legion, the latter supplying some material aid for their construction in the form of tiles. In return, the legion would have taken all the agricultural surplus produced by these establishments, an arrangement which enabled the military to reduce the proportion of foodstuffs imported from further afield thereby cutting down the cost incurred by the state in obtaining supplies for the troops. A similar clustering of farms with legionary tiles in their fabric had been detected in the vicinity of a few fortresses on the Lower German limes (von Petrikovits 1960, 61-3; Rüger, 1968, 51-5). At Vetera (near Xanten, Germany) such farms are restricted to a well-defined zone 7 by 5 km. in size, the agricultural establishments beyond having failed to produce a single stamped legionary tile.

While this approach would seem to have a degree of validity in certain cases, its shortcomings must not be overlooked. For instance, one has to take account of the fact that legionary produced tiles were often transported considerable distances for use at outlying auxiliary forts or other military facilities lying outside the prata of that particular legion. Thus, if one were to take the distribution of tiles produced by the legions in Britain at face value Chester's prata would appear to extend as far west as Caerhun (Gardner, 1925, 313-15) and Caernarvon (Boon, 1969, 62) and Caerleon's as far north as Pennal (Gresham, 1969, 106) giving both an area in excess of 5,500 sq. km. This obviously indicates the extent of the 'command area' of these two fortresses not that of their prata. Even where there does appear to be a well-defined zone around a fortress containing farms which have produced legionary tiles it is necessary to prove that both military base and farmsteads were occupied contemporaneously for this to be significant, for if the former was abandoned at a comparatively early date, as happened in the case of Vindonissa, or even if a fortress was deserted for only a few decades items such as tiles could easily have been looted by civilians after the garrison's departure. Furthermore, there must have been numerous occasions when tiles produced by the army found their way into the hands of private citizens via unofficial channels. One could cite as an example the occurrence of tiles of the Tenth and Thirteenth legions in country houses on the lands of the *municipium Carnuntum* and the *municipium Scarbantia* in Pannonia (Thomas, 1964, 132 and 207).

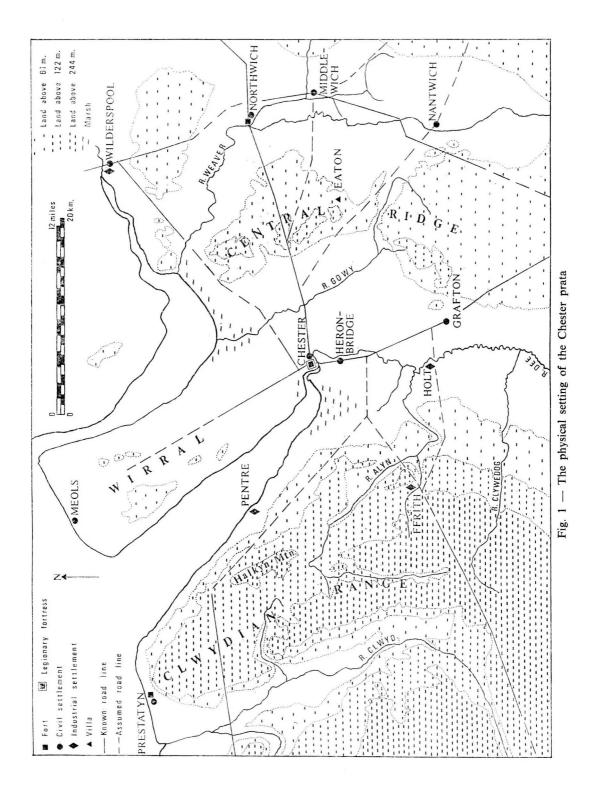
Despite the reservations voiced above there are some instances, such as Novaesium, Vetera and Vindonissa, where the distribution of farm-buildings containing legionary tiles would seem to be of some use in determining the minimum extent of the prata legionis. The sub-letting of part of its territorium to tenant-farmers by a legion, although difficult to prove, would have been an eminently sensible arrangement (the 'possessores vinearum et agrorum' mentioned on an altar - A.E. 1964, no. 196 - found at the fortress of Lambaesis in Numidia may have held this status). It is clear from a variety of ancient sources that the Roman government, partly because of the high cost of land transport and partly in order to avoid causing resentment amongst the provincials by requiring them to transport taxes in kind over long distances (Tacitus, Agricola, 19), went to considerable lengths to ensure that as much as possible of the supplies needed by a garrison were obtained locally (Manning, 1975, 112-16; Higham, 1982). On the other hand, it is equally clear that although troops could be used to collect supplies and even on occasion to cut hay (C.I.L. VIII 4322) they could not actively engage in the growing of crops. Thus, once a unit had become more or less permanently stationed at a particular place it would have been sound economic practice for it to have leased part of its territorium to civilian farmers.

Whether the areas allotted to legions were intended or ever managed to provide them with most of the staple foodstuffs they required is a question beyond the scope of the present discussion and one which the writer hopes to pursue at some future date.

We have already seen that some first century legionary *prata* encompassed areas well in excess of 500 sq. km. It cannot be assumed, however, that all legions in the first and second centuries possessed such extensive domains. Local factors such as geography and climate, soil fertility and vegetation, and the pre-existing socio-economic structure of the indigenous population would inevitably have caused variations in the size and disposition of the *prata legionis* from one fortress to another. There would also have been political considerations to take into account. For example, where a legionary fortress was established on the territory of a tribe which was either philo-Roman or had offered little resistance, the amount of land appropriated for the use of the legion is likely to have been kept to fairly modest proportions so as not to hinder the processes of Romanisation by causing ill-feeling among the native aristocracy.

Apart from those already mentioned, the fortresses situated along the Rhine/ Danube frontier have yielded few clues as to the size of their *territoria*. However, a reasoned estimate of the extent of the legionary *territorium* can be attempted at some of these sites. The first *Carnuntum* (Petronell, near Deutsch-Altenburg, Austria) where this problem has been the subject of no small amount of specula-

tion. Nowotny's suggestion of approximately 1 sq. mile is clearly far too small (1937, 147) while a recent study by Kandler (1977), based on the survival of supposed Roman land-divisions, implies an area of at least 18 sq. km. The territorial situation here is sufficiently well-known to enable the probable maximum extent of the territorium legionis to be discerned. Beside the Danube a little over 1.5 km. to the south-west of the fortress lay the municipium created by Hadrian. on the site of a pre-existing civil settlement, which possessed its own territorium while, to the south, the distribution of tombstones commemorating officials of the neighbouring civitas Boiorum demonstrates that the lands of the latter extended to within 10 km. of the legionary fortress, if not closer (Mócsy, 1974, 143-7). Thus, as Mócsy concluded (1974, 144), the legion's territorium here seems to have consisted of a comparatively narrow strip of land running south-eastwards beside the Danube probably as far as the auxiliary fort at Ad Flexum or that at Arrabona. If the terminus lay at the former the territorium would have been some 420 sq. km. in area or, if at the latter, then an area of some 750 sq. km. would have been involved. The situation at Aquincum (Budapest) appears to have been very similar. Here also a pre-existing civil settlement, in this case lying 2 km. north of the fortress, was elevated to the rank of municipium by Hadrian while to the west and south-west of the castra lay the lands of the civitas Eraviscorum; a combination which again seems to have confined the legionary territorium to a narrow zone along the Danube no more than 10 km. in depth (Mócsy, 1972, 145-7; 1974, 141-3). In fact, in general terms, this arrangement is likely to have been repeated at most, if not all, of the Rhine/Danube legionary bases. It is possible, of course, that the legionary territorium at both Carnuntum and Aquincum was originally larger, part being 'demilitarised' and handed over to the neighbouring *municipium* at the time of the latter's creation. However, there are grounds (discussed below) for believing that even the civil settlements which preceded these municipia on the same sites did not lie within the military territorium. The above estimates obviously do not take into account any land on the far bank of the Danube which may have been under legionary control. a possibility which although perfectly feasible both here and even more so along the Rhine is without conclusive supporting evidence. (A boundary-marker found in 1970 on the right bank of the Rhine almost opposite the site of the legionary fortress at Bonn - Bogaers and Rüger, 1974, 26-8 - bears the inscription '[L]egio prim[a] Minerv[ia] [p]ia fideli[s] prata [A]vrelian[a] [a]dampliav[it]'. However, the fact that this legion was involved in the laying out of the boundaries of the newly enlarged 'prata Aureliana' need not imply a direct military interest in these prata, for in addition to being the nearest source of skilled surveyors it was common practice for legionary personnel to be seconded as arbitrators in civil boundary disputes, e.g. C.I.L. III 2882, 2883, 8472, 9832, 9973, 12794).



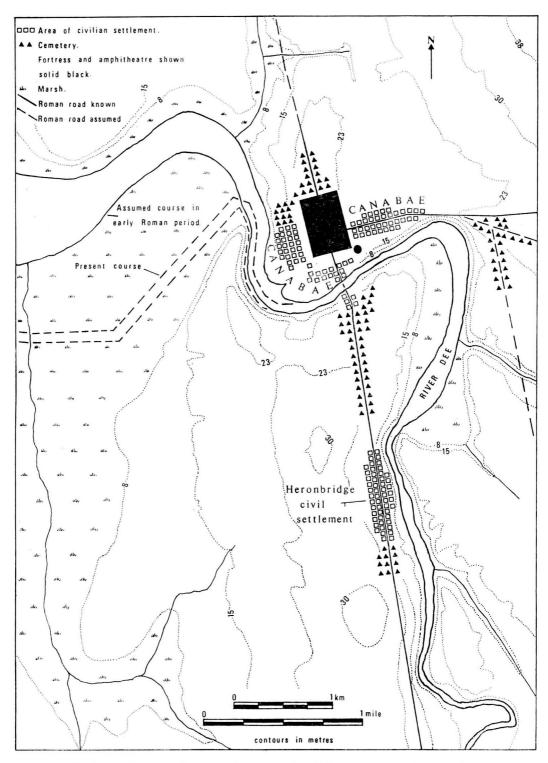


Fig. 2 - Chester - legionary fortress, major civil settlements, and cemeteries.

THE PRATA LEGIONIS AT CHESTER (Figs. 1 and 2)

In the absence of conclusive epigraphic evidence such as inscribed boundarymarkers any discussion of the extent of the *prata legionis* at *Deva* can be no more than pure conjecture. In the discussion which follows, local geographical, historical and political factors are considered in conjunction with the few available pieces of indirect or inferential evidence and, where appropriate, results of research elsewhere to suggest a number of what it must be stressed are merely possibilities.

On first inspection, the minimum extent of the *prata* to the south and west of Chester would seem to be easily discernible. In the former direction, 12 km. from the fortress on the left bank of the Dee, stood the tile and pottery works of legio XX at Holt, an establishment which one would readily assume to have lain within the boundaries of the prata (Grimes, 1930; Thompson, 1965, 53-9). Just over 16 km. north-west of the fortress, beside the Dee estuary, lay the industrial settlement at Pentre Ffwrndan, near Flint. A considerable number of lead-smelting furnaces were found here during excavations in the 1920s and it seems likely that a major function of this settlement, which came into being in the Flavian period, was the processing of lead ore won from the Halkyn area (Atkinson, Petch and Taylor, 1925; Petch, 1936; Davies, 1949, 124-47; Tylecote, 1962, 76-7). More recent excavations, in 1976-77, exposed parts of a substantial and elaborate residential complex which may well have been occupied by an official in charge of the local lead-working industry (Davey and O'Leary, 1978). Because of the similarity between the constructional techniques employed in the original timber phases of this complex with those which occur in contemporary military buildings at Chester, the use of stamped Twentieth Legion tiles in its later, stone, phases, and the presence of Holt pottery in sizeable quantities the excavators concluded that this official was an army officer (*ibid.*, 151). The third site in the area which has produced legio XX tiles is Ffrith, lying some 16 km, south-west of Chester (Taylor, 1922, 68-71; Davies, 1949, 226-38; Room, 1968; Kelly, 1976). The exact character of the occupation here has still to be determined. The site appears topographically unsuitable for an auxiliary fort, yet it possessed a bathhouse (or a larger building with a baths-suite) which, on the evidence of the stamped tiles, was constructed by the military (Room, 1968, 84). In view of the extensive lead deposits in the surrounding hills it is highly probable that the processing of metallic ore was one of the main activities carried out here. Indeed, this may have been the sole reason for the settlement's existence although it has to be admitted that the actual evidence for such activity to date is very slender, consisting merely of 'lead slags and melted lead' said to have been discovered in 1874 (Davies, 1949, 231). Despite the lack of corroborative evidence it seems more than likely that Ffrith was a mining and ore-processing centre (the lead ingots presumably being transported down the Rivers Alyn and Dee to Chester either for use in the fortress and/or for transhipment to destinations further afield), while the fact that a bath-house was constructed by or with the aid of legio XX, presumably for use by the work-force or their supervisors, clearly implies these operations were carried out under official control. (The alternative possibility of Ffrith being a minor settlement which grew up and around a *mansio* lacks conviction).

The siting of the legionary tilery at Holt together with the official and seemingly military character of the establishments at Pentre and Ffrith could well lead one to suppose that the whole of the area stretching from Wrexham in the south to Holywell, or even Prestatyn,* in the north - in short, the northern part of the Clwydian range as defined by the Clwyd and the upper reaches of the Dee lay within Deva's prata legionis. The value of this area to the Roman authorities lay in its richness of mineral deposits, especially lead, and the beginning of official exploitation of these has been linked with the creation of a legionary fortress at Chester (Petch, 1969, 35). Certainly, these two events occurred within a few years of one another. The conventional view that the fortress was founded, for legio II Adiutrix, during the governorship of Frontinus (A.D. 74-78) still holds true (Carrington, 1977, 37-8; 1986a, 18-19), while the earliest, officially-produced ingots from the Clwydian lead-fields date to A.D. 74 (Wright and Richmond, 1955, nos. 196 and 197 = C.I.L. VII 1204 and E.E. VII 1121). The latter were found actually on the confines of Chester: one during the construction of the Chester-Crewe railway line, nearly 2 km. east of the city, not far from the Roman road heading for Northwich (C.I.L. VII 1204; Watkin, 1886, 162); the other during the building of the gasworks beside the Roodee, in association with the apparent remains of a timber wharf or jetty (E.E. VII 1121; Watkin, 1886, 163; Shrubsole, 1887, 77-81). Mr. D. F. Petch tentatively related this pair of ingots with the beginning of construction work on the legionary fortress (1969, 35). Dr. P. Carrington, on the other hand, believes A.D. 74 is a little too early for such work on strategic grounds, suggesting instead that the ingots may have been lost in transit to more distant destinations (1986b, 103). If he is correct, official exploitation of the Clwydian lead deposits began before the installation of legio II Adiutrix, while the occurrence at Chester of these two ingots would imply the existence of a pre-legionary military establishment, a possibility which is suggested but by no means proved by a slight amount of other evidence (see Carrington, 1977, 37-8; Hartley, 1981). Then again, these two views can be reconciled to some extent if one assumes the ingots in question were not brought to Chester until a year or two after their manufacture, though this would still of course entail official exploitation beginning before the foundation of the fortress. Whether the initial output of the Clwydian lead-fields was destined for Chester alone or for more distant destinations or both, the inferior style of the ingots of A.D. 74 (which lack the raised protective frame around the inscription customary on such items)

^{*} At Prestatyn there seems to have been a succession of forts, a thriving civil settlement, and a bath-house incorporating *legio XX* tiles: Newstead, 1937, 1938; Frere, 1977, 358-9; 1985, 252-3; Grew, 1981, 314; Blockley, 1984, 1985.

when compared with that of the ingots produced in A.D. 76 (Webster, 1953, nos. 21 and 22 = C.I.L. VII 1205 and E.E. IX 1264; Whittick, 1982, 120-21) is suggestive of hasty production methods during the earliest phase of official exploitation. If so, imperial working of the lead deposits is unlikely to have begun much before A.D. 74.

Although not directly relevant, it is worth noting there is evidence of private prospectors at work in the Clwydian lead-fields prior to the period of direct imperial exploitation and possibly as early as c. A.D. 60 (see Webster, 1953; also Frere, 1978, 322 and Whittick, 1982, 118-21 both discussing Webster, 1953, no. 29 and *C.I.L.* VII 1203).

Although legio XX and presumably its predecessor at Chester, legio II Adiutrix, were almost certainly involved in the operation of the lead mines in some capacity there is no proof of actual legionary ownership of the area; none of the surviving stamped ingots, for example, bear any reference to either legion. Indeed, such an arrangement would, as Webster argued long ago (1953, 10-14), have run counter to the usual organisation of large-scale mineral extraction. Normally, the mines of the Roman Empire belonged to the state and were operated as an Imperial monopoly; either directly, using slave and/or convict labour, or indirectly, by individual private lessees or companies, such as Titus Claudius Triferna and the societas Lutudarensis (see Frere, 1978, 322-3). In both cases the overall administration of the mines was the responsibility of the provincial procurator, who was answerable to the emperor for the management of the various imperial estates and all financial aspects of provincial government, each mining area being supervised by a procurator of lesser status (procurator metallorum) (for mining in Britain, see Liversidge, 1968, 203-9, Frere, 1978, 323-4; Spain, translated extracts from detailed regulations concerning organisation of mines at Vipasca, Lewis and Reinhold, 1966, 188-94, also Domergue, 1966; Danubian provinces, Mócsy, 1974, 131-4 and Alföldy, 1974, 113-16; organisation in late Roman period, Jones, 1964, 838-9). Where mines were operated directly by the state, such as eastern Clwyd in the Flavian period, military detachments would have been present to guard the work-force. Furthermore, areas rich in minerals tend, by their very nature, to be somewhat remote while, because of their intrinsic and/or practical worth, the metals in any region were one of the first resources to be exploited following its pacification. For these reasons it was the army and the legions in particular, with their skilled engineers, architects, surveyors, stone-masons and carpenters, which frequently constructed the more elaborate buildings and facilities at mining centres. This, the writer believes, is the true significance of legio XX tiles at Pentre and Ffrith and the buildings erected in military fashion at the former. Thus, on this reasoning, the Clwydian lead-fields, rather than being part of *Deva's prata legionis*, would have been formed into an imperial estate (in this case a territorium metallorum) c. A.D. 73; the various refining centres — in addition to Ffrith and Pentre there may have been others in the Holywell/Basingwerk area (Davies, 1949, 187-97) — would have been run by procuratorial officials, and security and order enforced by small detachments of troops from the legion at Chester, the latter also supplying men and materials for the construction of the more sophisticated of the requisite installations and facilities.

Turning now to the possible extent of the *prata legionis* southwards from the fortress, the existence of legio XX's depot at Holt would appear to imply that both sides of the Dee valley for a distance of at least 12 km. up-river from Chester were subject to direct military control. Yet, here too the territorial situation may not have been quite as straightforward as appearances suggest. On the west bank of the Dee 2 km. south of the fortress and just beyond the limits of one of the latter's main cemeteries (Thompson, 1965, 48-9, fig. 11; Mason, 1987) lie the remains of the Roman site at Heronbridge. Although still far from being completely explored, intermittent and, for the most part, small-scale explorations carried out since the site's discovery in 1929 have yielded sufficient information to show that it came into being soon after the foundation of the fortress, with occupation continuing until at least c. A.D. 300, and that it took the form of linear development along the road running south towards Whitchurch for a distance of at least 350 m. (Petch, 1933; Hartley, 1952; 1954; Hartley and Kaine, 1954; Thompson, 1965, 60-65; Mason, forthcoming). On the other hand, successive excavators found difficulty in accounting for the existence of a second, substantial and quite distinct settlement in the immediate vicinity of the fortress (the other, of course, being the canabae legionis beside the castra itself — Mason, 1978; 1987). Hartley, for example, noting the high proportion of Holt wares in the ceramic assemblage from the site, suggested Heronbridge may have had a military or partly military function (1952, 13). Speculating further, he put forward the idea that it had functioned as a transhipment centre for the products of the Holt kilns where they were offloaded from barges and placed on carts for the final leg of the journey to the fortress, an operation necessitated, he proposed, by the probably unnavigable character of the Dee between Heronbridge and Chester (1952, 14; elso Thompson, 1965, 15-16). Although research conducted since Hartley's comments appeared in print has tended to confirm that the distribution of Holt wares elsewhere outside Chester is confined to those sites where there was either a government installation, as at Pentre (Davey and O'Leary, 1978, 151) and Ffrith (Room, 1968, 83), or a military base, as at Prestatyn (Newstead, 1937, 227, fig. 9 no. 2; 1938, 184, fig. 4 nos. 13 and 17), their regular occurrence in occupation levels throughout all sectors of the canabae legionis beside the fortress at Chester suggests they may also have been available for use by at least a section (perhaps the veteran element?) of the neighbouring civilian population (Newstead, 1939, 78, 81; 1948, 71-2, 78, 87, 97, 114, 116; Whitwell and McNamee, 1964, 12-16; Kelly, 1965, 13-18; Robinson and Ward, 1975, 46; Mason, 1980, 33, 38, 51, 72-3; and on a number of other excavations currently being prepared for publication). Consequently, the quantity of Holt material at Heronbridge, given the latter's close proximity to the fortress, may not be as significant as Hartley imagined. In addition, the site has produced only a single, stamped legionary tile, hardly sufficient to prove a strong military connection. Furthermore, the supposition that the flat-bottomed barges which would have been used to transport the products of the Holt depot down river could not have negotiated the stretch of the Dee below Heronbridge is without foundation. Quite apart from these considerations, the general character of the settlement, with its 'ribbon-development' form and numerous examples of typical civilian 'strip-houses' set end on to the road, demonstrates conclusively that this was a civilian community.

Examination of the settlement pattern in the vicinity of legionary bases in other provinces reveals that the existence of two substantial and quite independent civilian communities close to a fortress, rather than being a situation peculiar to Chester, was in fact commonplace. This phenomenon was recognised at some sites on the Continent as long ago as the 1920s (Bohn, 1926) while research by foreign scholars since the last war, especially Professor András Mócsy (1953, 1972; 1974, 139-43), Professor Harald von Petrikovits (1960, 61-3), and Friedrich Vittinghoff (1968; 1970; 1971), has demonstrated that the overwhelming majority of castra along the Rhine-Danube frontier possessed two town-like settlements. In brief, the following topographical details would seem to be typical of pre-Severan legionary bases in northern frontier provinces. Immediately outside the defences was a civil settlement, the history and development of which mirrored those of the fortress itself. Its population was composed of merchants, traders and craftsmen who made their living by providing goods, services and entertainments which the members of the garrison could take advantage of during their off-duty hours, veterans and their families, slaves and servants employed in the households of the above, and the common-law wives of serving soldiers and their children (until the early third century, it was a condition of service for the ordinary soldier that he be single — for the most recent discussion of the evidence in detail see Campbell, 1978). The Roman citizens in this community, which from the time of Hadrian if not earlier was known as the canabae legionis, formed the pseudo-autonomous corporate body of 'cives Romani consistentes ad legionem . . .' (e.g. C.I.L. III 3505) and the population as a whole buried its dead in the same cemeteries as those used by the garrison. At a distance of 1.5 - 2.5 km. from the fortress and separated from both it and the *canabae* by a space which was neither built upon nor used as a burial ground lay another sizeable civil settlement, easily distinguishable by its extent and character from the numerous minor settlements which developed in the fortress hinterland, whose cemetery was quite distinct from those surrounding the military base and its suburbs. This is exactly the situation one finds at Chester. where the civil settlement at Heronbridge lies 2 km. from the fortress, is separated from the suburbs and cemeteries of the latter by a 'clear zone', and possesses its own burial ground.

While this 'duality of settlement' has been discerned at many legionary bases the

reasons for its development are still far from clear. At a number of the Heronbridge-type settlements, such as those at Carnuntum and Aquincum (Mócsy, 1974, 141-2), a high proportion of the inhabitants were settlers, both citizen and non-citizen, from other provinces. At others, however, such as those at Vetera (von Petrikovits, 1952; Hinz, 1975, 825-31) and Novaesium (Neuss, Germany) (von Petrikovits, 1961; Müller, 1975), the bulk of the population, at least originally, seem to have been of local extraction. Yet, no evidence has been found at any of the Heronbridge-type settlements to suggest they developed out of pre-Roman centres. Similarly, the notion that they may have originated as civil settlements beside early and comparatively short-lived auxiliary forts is also without support, either in the form of finds or features. In the light of the evidence currently available, the only satisfactory explanation for the existence of two substantial, nucleated settlements so close together would seem to be that the legal/administrative position of the two communities differed fundamentally; in other words, the Heronbridge-type settlements, unlike the *canabae* beside the fortress, did not lie on the *prata legionis*. This is not a new theory, for it was first advanced by Mócsy some thirty years ago in connection with the dual settlements discernible in the vicinity of legionary bases in the Danubian provinces (1953, 184-8). In his most recent reiteration of this explanation he writes:

'The fact that two civil settlements were established near the camps may best be explained by the supposition that the circumstances under which the settlers established themselves differed right from the start; moreover, the entrepreneurs, soldiers' relatives, veterans and other foreigners could choose to settle where the legal and administrative conditions seemed more appropriate to the kind of life they had in mind' (1974, 140).

The evidence from the legionary sites along the Rhine could suggest a slight modification of this theory. As mentioned above, the inhabitants of some of the Heronbridge-type settlements were, initially, predominantly people of local origin. Furthermore, in those cases where there was a major pre-Roman centre nearby, such as Aquincum (Bonis, 1969), Singidunum (Belgrade) (Todorovic, 1956), and Carnuntum and Vindobona (Vienna) Mócsy, 1974, 72-3) in the Danubian provinces, this stood on a site different from that occupied by the later Heronbridge-type community and had been abandoned by the time a legionary fortress was established. It would therefore seem that, in some cases, a Heronbridge-type settlement supplanted an earlier native centre while, in others, it provided a settlement focus for the local indigenous population where none had hitherto existed. In all cases these settlements also attracted to a varying degree settlers of foreign extraction including veterans and in some instances they may have formed the majority even at a fairly early stage. As, on present evidence, there appears to have been only one truly nucleated settlement in the immediate vicinity of legionary fortresses apart from the canabae legionis, and as there seems little

reason for the development of a second settlement of this type so close to a fortress unless the legal and administrative conditions governing its existence differed from those which prevailed in the canabae, then there does seem every likelihood that the Heronbridge-type settlements lay not on the prata legionis but on the territory of the neighbouring *civitas* or proto-*civitas*. This hypothesis is supported indirectly by the fact that no evidence of 'duality of settlement' has been found at those legionary fortresses, such as Castra Regina (Ulbert, 1960) and Lauriacum (Enns, Austria) (Vetters, 1977, 367-74), which were founded in the late second century, shortly before the introduction of innovations and reforms by Severus and Caracalla which, like the promotion of certain canabae settlements to chartered towns, not only resulted in a probable reorganisation and shrinkage of legionary territoria but also did away with the complex and anomalous legal position of canabae and their inhabitants, all civilian communities in the vicinity of legionary fortresses now being placed formally under a single form of civil administration (Mócsy, 1953, 189-99; 1974, 221; Mason, 1984, 249-67). Whether the growth of settlements of Heronbridge type was an entirely spontaneous process or the result of official policy is a problem which has yet to be resolved.

If the settlement pattern at Chester really does mirror that at legionary bases in other provinces and assuming Mócsy's ideas regarding the territorial and administrative arrangements are correct then the chances of any land on the west side of the Dee having formed part of the prata legionis are considerably reduced. This appears even more improbable when one considers the local geography. Until its canalisation in the eighteenth century the Dee below Chester had followed a very meandering course within a broad expanse of marshland, the latter, given the effects of drainage works in recent centuries, probably extending southwards nearly as far as the site of the modern village of Dodleston in the Roman period. Consequently, the area of usable land immediately south of the fortress was restricted to a narrow ridge separating the marshlands to the west from the Dee above Chester to the east. Traffic proceeding by land from Chester to north-east Wales had to make a detour around the marshlands by first taking the road running south from the fortress along this ridge (Margary, 1973, fig. 13 no. 6a) as far as the area now occupied by Eaton Hall, there taking a branch road running off to the west (ibid., 348-9). The civil settlement at Heronbridge, of course, stands astride the former road at the point where the ridge is no more than 2 km. across and so, if the assumption that this settlement did not lie on the prata is correct, it seems most unlikely that the legion could have owned any part of this ridge other than its northernmost tip which was occupied by an outlying cemetery belonging to the fortress and its suburbs. It might be assumed that the legion controlled a narrow strip along the west side of the ridge linking up with and giving them access to better land beyond, but this would have been extremely untidy and complex arrangement and it would have been far simpler to have had the Heronbridge settlement sited on the east bank of the Dee with the latter forming the boundary of the *prata*. Furthermore, any area remaining for the possible use of the garrison between the western edge of the marshlands and the eastern boundary of the imperial mining estate beyond would have been negligible.

In the light of the arguments deployed so far, therefore, the bulk of Deva's prata probably lay to the north and east of the Dee; the area to the west and south-west being taken up by marshes with an imperial mining estate beyond, with the land to the south, including Heronbridge and its hinterland, being under civil administration. Obviously, on this reasoning, legio XX's depot at Holt, although situated on military land, must have lain outside the prata proper for the land between it and the fortress, at least on the west side of the Dee, would from c. A.D. 90 have formed part of the civitas Cornoviorum. The location of this facility has always been something of a puzzle but is perhaps explained by the site having possessed the combination of features necessary for the successful operation of such an establishment — ample supplies of good quality clay and timber, together with a low-lying and level position close to a river for ease of transport - which were unobtainable further down-river. In addition, Holt is one of the few places where the Dee can be bridged with relative ease and, although there is no evidence to support such a notion at present, it may well have been the scene of military activity in the pre-Flavian period. If so, the later depot could have been erected on land which had already been in the army's possession for some considerable time.

Assuming that the prata legionis did lie mostly to the east and north of the Dee it remains to try and distinguish any physical features which may have exercised an influence upon the siting of its boundaries. The recent discovery of a well appointed villa at Eaton by Tarporley, some 16 km. east-south-east of Chester, where occupation began in the early/mid second century clearly shows that the prata cannot have extended further east than the centre of the Central Cheshire Ridge (Mason, 1983 — the tiles used here were definitely not of legionary manufacture incidentally). Indeed, the latter, which in places rises to a height of over 220 m., may well have been chosen by the legionary command as a convenient natural boundary for the east side of the prata. Less likely, though still feasible, is the possibility that this function was performed by the River Gowy, running parallel to the northern part of the Central Ridge some 6 km. east of the fortress. In medieval and earlier times this river was known as the Tarvin, from which the villages of Wervin and Tarvin which lie beside it are assumed to have taken their names (Dodgson, 1967, 32). Tarvin, in fact, is an anglicised version of the Welsh Terfyn which in its turn is derived from the British-Latin terminum (Latin terminus — a boundary). It has been suggested that the River Tarvin was so named because it served as a political boundary during the first stages of the English penetration into Cheshire in the late sixth/early seventh century (Dodgson, 1967, 32). Heaping speculation upon conjecture, this river could have served such a purpose even earlier - defining the eastern limit of the prata of the Roman legionary fortress the preservation of this function in its later name perhaps caused by the survival

of inscribed boundary markers, similar to those found in Spain mentioned above, bearing the legend 'Ter(minus) August(alis) dividit prata leg(ionis) XX et civit-(atem) Cornov(iorum)'.

While we have no direct evidence for the northerly extent of the Chester *prata* it seems reasonable to assume some portion of the Wirral peninsula was under the garrison's control. As a minimum, one might suggest this consisted of that portion lying south of an imaginary line drawn between Neston and Eastham. However, as the Wirral would have been totally isolated from the neighbouring areas under civil administration by that part of the *prata* lying in the immediate vicinity of the fortress it could be that the whole of this peninsula was incorporated into, and thus formed the major part of, the *prata* legionis.

Although, because of insufficient evidence, it has proved impossible in the foregoing discussion to reconstruct the exact size and disposition of Deva's prata legionis the exercise has at least highlighted the most likely possibilities and identified the various types of potentially relevant information and their limitations. It now remains to summarise those possibilities in terms of configuration and size, it being assumed throughout that the mineral rich zone of north-east Wales was a territorium metallorum run by procuratorial officials. Assuming Heronbridge lay outside the military controlled zone and the boundary separating it from the legionary suburbs was carried across the river to mark the southern limit of the prata on the east side of the Dee, with the eastern limit lying on the western lower slopes of the Central Ridge, the northern limit represented by the Neston -Eastham axis, and the western limit marked by the Dee estuary, then the total area of the prata would have been approximately 200 sq. km.; a little less if the Gowy was the eastern boundary. If, on the other hand, the whole of the Wirral was under the Twentieth's control, then the area involved would have been about 350 sq. km. Then again, if one takes the first estimate above but instead extends the area under direct legionary control to include Heronbridge and Holt, the minimum area of the prata would have been c. 360 sq. km., with an additional 150 sq. km. if one includes that part of the Wirral lying north of the Neston -Eastham line.

LEGIONARY PRATA ELSEWHERE IN BRITAIN

The size of the *prata legionis* at any of the comparatively short-lived pre-Flavian fortresses in Britain, with the possible exception of those which subsequently became veteran colonies, is unlikely ever to be known. The sites in the latter category are Colchester, Lincoln and Gloucester and it has generally been assumed that the *territoria* of the later *coloniae* were formed mainly, if not exclusively, out of the pre-existing legionary *prata* because this would have involved the appropriation of little, if any, additional land, thus minimising any possible resentment on the part of the native population. However, there is, of course, no guarantee that this is what actually happened. Unfortunately, clues as to the size of the territoria of the coloniae are also very few. Of the three coloniae, Gloucester seems to offer the greatest potential in this respect. The definition of the extent of the *territorium* here has been attempted by several writers (Clifford, 1955; Wacher, 1974, 152-55; Hurst, 1976, 76-9), most of whom have based their calculations in part on the distribution of tiles bearing the stamp 'R.P.G.', usually interpreted as an abbreviation of *Rei Publicae Glevensium*. Examples of these tiles have been found at a number of villa sites in Gloucester's hinterland, all of which lie within the 10-12 km. wide strip of rich farming land which extends both to the north and to the south of the city on the east side of the River Severn (Wacher, 1974, 152). The eastern limit of this zone is the Cotswold scarp and this could well have marked the boundary not only of the colonia's territorium but also the earlier legionary prata. Furthermore, in his study of the territorial arrangements at Gloucester, Wacher (1974, 152-54) drew attention to the existence of a skeletal pattern of modern roads, tracks, footpaths and parish boundaries stretching from the vicinity of Cheltenham south-westwards to Aust which appear to conform to a grid of 20 actus squares (that is with sides of 2,400 Roman feet) laid out with respect to the Gloucester-Sea Mills road and Ermin Street. If these features, which do not continue beyond the Severn nor much above the 60 m. contour on the Cotswolds, do represent surviving elements of Roman centuriation associated with the colonia, then the territorium of the latter, and perhaps the legionary prata, would have encompassed an area of approximately 500 sq. km.

Apart from Chester, of the fortresses occupied in Flavian and later times only at Caerleon is there sufficient information to make speculation about the extent of the *prata legionis* worthwhile (Fig. 3). The fortress here lay on the west bank of the River Usk 8 km. from the point where the latter flows into the Severn estuary. One item of potential significance for the extent of the *prata* is the socalled boundary-stone. (*R.I.B.* 395) found on the coast near Goldcliff Priory, 8 km. south-south-east of the fortress, in 1878 (Morgan, 1882). It was discovered lying in tidal deposits in front of a long sea-bank some 350 m. west of the Priory and bears the inscription 'Coh(ortis) I c(enturia) Statori M[a]ximi p(assus) X[X]III s(emis)' — 'From the First Cohort, the century of Statorius Maximus (built) $33\frac{1}{2}$ paces'. The stone is clearly designed for insertion into an earthwork of some kind and even if this did not actually mark the limit of the *prata* but performed some other function, perhaps connected with drainage or sea-defence, it nevertheless suggests that *legio II Augusta's* territory reached to the coast.

The extent of the *prata* eastwards is unlikely to have been very great. By the middle of the second century at the very latest, the *Silures*, on whose ancestral lands Caerleon lay, had been organised into a formally constituted *civitas peregrina* and a new tribal capital established at Caerwent, 13 km. east of *legio II Augusta's* base (Wacher, 1974, 33-5 and 375-404; Salway, 1981, 138 and 186-88; Davies, 1984, 94). Consequently, the zone controlled by the latter can have reached no

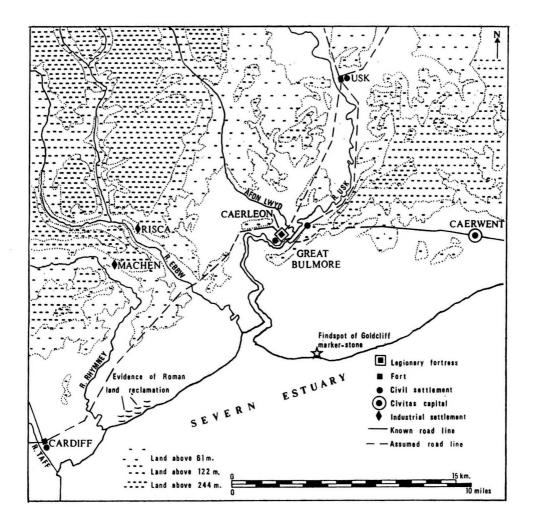


Fig. 3 — The physical setting of the Caerleon prata

more than about 7 km. in this direction. Indeed, on the basis of recent discoveries made in the vicinity of Caerleon a case can be made for suggesting even this figure is too great. Intermittent excavation since 1976 at Great Bulmore, 2 km. eastnorth-east of the fortress on the opposite side of the Usk, has disclosed the existence of a substantial civil settlement, occupation of which appears to have spanned the period from c. A.D. 100 until the close of the third century (Vyner, 1978; Zienkiewicz, 1983; 1984; Frere, 1984, 270 and fig. 4; 1985, 260-63 and fig. 9). In terms of layout this settlement consisted of ribbon-development stretching along the Caerleon-Caerwent road for some 500 m. while the majority of the buildings examined so far conform to the standard civilian 'strip-house' type set end on to the road frontage. Thus, in form, chronology, building-type, and distance from the neighbouring fortress the Great Bulmore settlement compares very closely with that at Heronbridge, near Chester, and, like the latter, was not only isolated by a 'clear zone' from the suburbs and cemeteries surrounding the fortress but also possessed its own burial-ground. It is reasonably certain, therefore, that Caerleon can be added to the list of legionary fortresses where a 'dual-settlement' pattern can be discerned. Consequently, if the theory that the more distant of the two civil settlements lay outside the military controlled zone is correct, then the prata legionis at Caerleon, at least in the immediate vicinity of the fortress, can have extended no further than about 1.5 km. eastwards from the castra. It is interesting to note, incidentally, that if the suggested position of the eastern boundary of the prata is projected southwards it would strike the coast close to the findspot of the Goldcliff 'boundary-stone'.

The northwards extent of the *prata* is very difficult to estimate. The fact that Caerleon was constructed at a point only 13 km. down-river from the earlier, pre-Flavian, legionary base at Usk has led Manning to suggest that when Caerleon was built it simply took over the latter's *prata*; the position and size of the military controlled zone remaining unchanged, only the location of the garrison being altered (1981, 46-7). Although evidence to support this notion is lacking at present, and will probably continue to be so, a consideration of the local geography tempts one to assume that a considerable portion of the Usk valley, at least on the right bank of the river, was included in Caerleon's *prata*.

The westerly extent of the Second Legion's domains is equally problematic. Activity by *legio II* at Risca, 10 km. from the fortress in this direction, is attested by stamped tiles recovered in 1852 (*Archaeologia Cambrensis*, 10, 1855, 209) and 1983 (Frere, 1984, 270). Those found in the nineteenth century were retrieved from the remains of a substantial masonry building possessing an apse which seems likely to have been a bath-house constructed by the legion. At nearby Lower Machen, 2 km. to the south-west, traces of an extensive Roman settlement have been located where numerous fragments of lead and lead ore have been recovered (Nash-Williams, 1939), while the discovery of late first century pottery, some with stalagmite coating, in abandoned lead-workings at Cefn Pwll Du, less

than a km. distant, show they were in operation in the Roman period (Boon, 1965). Risca and Lower Machen very probably functioned as refining centres for the lead ore produced by neighbouring mines like that at Cefn Pwll Du and the stamped tiles from Risca point to a degree of involvement by legio II in their operation. Whether these settlements lay actually on the latter's prata however is another matter. Although we have two complete ingots which incorporate the abbreviation 'L.II' - usually assumed to mean legio II - in their cast inscription (C.I.L. VII 1202 with Whittick, 1982, 115-18; C.I.L. XIII 3491) these originated from the Mendip lead-fields and were produced in the Neronian period when the Second Augusta was still stationed in south-west England. Whereas it is known, from the distribution of stamped ingots (C.I.L. VII 1205 and 1206; E.E. IX 1264), that the output of the Clwydian lead-fields was despatched not only to Chester but also to destinations much further afield there is, as yet, no evidence that the products of the Machen and Risca refining centres were as widely distributed. This might suggest the latters' production was geared solely to the needs of the fortress at Caerleon; the mines and refining centres being operated by legio II and lying within its *prata*. On the other hand, the lack of stamped ingots from these lead-fields may be simply a mischance of survival.

To summarise, if the *prata legionis* at Caerleon included that part of the coastal area stretching from a point a little to the east of Cardiff to somewhere in the vicinity of Goldcliff Priory, together with the mining areas at Lower Machen and Risca and the lower Usk valley as far north as Usk itself, then this would give a total area of approximately 375 sq. km. However, it is by no means certain that Usk lay within the zone controlled directly by the Second Legion and the lead-mining centres in the Lower Machen/Risca area, although perhaps operated under the latter's supervision, may not have lain on the actual *prata*. Furthermore, even if *legio II Augusta's* territory did extend as far as Usk originally, part may well have been ceded to the *civitas Silurum* when the latter was founded.

BIBLIOGRAPHY

L'Année epigraphique, Paris, 1888G. Alföldy, Noricum
D. Atkinson, J. A. Petch and M. V. Taylor, 'Excavations at Pentre Ffwrndan, Flint', Flintshire Historical Society Publications, 10, Pt. I, 5-22; Pt. II, 5-28
K. Blockley, 'Prestatyn', Archaeology in Wales, 24, 51-3
K. Blockley, 'Prestatyn', Archaeology in Wales, 25, 29
J. E. Bogaers and C. B. Rüger, Der Niedergermanische Limes
O. Bohn, 'Rheinische Lagerstädte', Germania, 10, 25-36
E. B. Bonis, Die spätkeltische Siedlung Gellérthegy-Tabán in Budapest
G. C. Boon, 'Coed Cefn Pwll-Du, Draethen', Archaeology in Wales, 5, 17

A.E. Alföldy, 1974 Atkinson, Petch and Taylor, 1925

Blockley, 1984 Blockley, 1985 Bogaers and Rüger, 1974 Bohn, 1926 Bonis, 1969

Boon, 1965

40	D. J. P. MASON
Boon, 1969	G. C. Boon, 'Caernarvon', in V. E. Nash-Williams, <i>The Roman</i> Frontier in Wales, 2nd edn. by M. G. Jarrett, 69-64
Breeze, 1982	D. J. Breeze, 'Demand and supply on the Northern Frontier', in P. Clack and S. Haselgrove, eds., <i>Rural Settlement in the</i> <i>Roman North</i> , 148-65
Campbell, 1978	B. Campbell, 'The marriage of soldiers under the Empire', Journal of Roman Studies, 68, 153-66
Carrington, 1977	P. Carrington, 'The planning and date of the Roman legion- ary fortress at Chester', J.C.A.S., 60, 35-42
Carrington, 1986a	P. Carrington, 'The Roman advance into the North Western Midlands before A.D. 71', J.C.A.S., 68, 5-22
Carrington, 1986b	P. Carrington, 'The earliest evidence for lead-mining in Flintshire', Cheshire Archaeological Bulletin, 10, 102-5
<i>C.I.L.</i>	A. Huebner, ed., Corpus Inscriptionum Latinarum, Berlin, 1863-
Clifford, 1955	E. Clifford, 'Stamped tiles found in Gloucestershire', Journal of Roman Studies, 45, 68ff.
Davey and O'Leary, 1978	P. J. Davey and T. J. O'Leary, 'Excavations at Pentre Ffwrn- dan, Flint, 1976-7', <i>Flintshire Historical Society Publications</i> , 27, 139-51
Davies, 1949	E. Davies, The Prehistoric and Roman Remains of Flintshire
Davies, 1984	J. L. Davies, 'Soldiers, peasants and markets in Wales and the Marches', in T. F. C. Blagg and A. C. King, eds., <i>Military</i> and Civilian in Roman Britain (British Archaeological Dependent Device 192) 122
Dodgson, 1967	Reports, British Series, 136), 93-128 J. M. Dodgson, 'The English arrival in Cheshire', Trans- actions of the Historical Society of Lancashire and Cheshire, 119, 1-37
Domergue, 1966	C. Domergue, 'Les lingots de plomb romains du musée archéologique de Carthagéne et du musée naval de Madrid',
Dorutiu-Boila, 1972	Archivo Español de Arqueologica, 39, 41-72 E. Dorutiu-Boila, 'Das Militärterritorium der legio V Macedonica an der unteren Donav im 2 Jhr. v. Z.', Studii si
E .E.	Cercetari Istorie Veche 23, 45-62 Ephemeris epigraphica, Corpus Inscriptionum Latinarum supplementum I, 1872-9, 1913
Egger, 1951	R. Egger, 'Bemerkungen zum Territorium pannonischer Festungen', Anzeiger der oesterreichischen Akademie der
Frei-Stolba, 1976	Wissenschaften, 88, 206-32 R. Frei-Stolba, 'Die römische Schweiz: Ausgewählte staats- und verwaltungsrechtliche Probleme im Frühprinzipat', in H. Temporini and W. Haase, eds., Aufstieg und Niedergang der römischen Welt: Geschichte und Kultur Roms im Spiegel der neueren Eenschung II (5.1), 292 402
Frere, 1977	neueren Forschung, II (5.1), 288-403 S. S. Frere, ed., 'Roman Britain in 1976, I: Sites Explored', Britannia, 8, 356-425
Frere, 1978	S. S. Free, Britannia: a History of Roman Britain, revised edition
Frere, 1984	S. S. Frere, ed., 'Roman Britain in 1983, I: Sites Explored', Britannia, 15, 266-332
Frere, 1985	S. S. Frere, ed., 'Roman Britain in 1984, I: sites explored', Britannia, 16, 252-316
Garcia y Bellido, 1956	A. Garcia y Bellido, 'Exploraciones arqueologicas en la provincia de Santander, Noticiario B: Terminos Augustales de la legio IIII Macedonica', Archivo Español de Arqueol- ogica, 29, 184ff.
Garcia y Bellido, 1961	A Garcia y Bellido, El exercitus hispanicus desde Augusto a Vespasiano', Archivo Español de Arqueologica, 34, 114ff.

Gardner, 1925	W. Gardner, 'The Roman fort at Caerhun', Archaeologia Cambrensis, 80, 307-41
Gotzenbach, von, 1963	V. von Gotzenbach, 'Die Verbreitung der gestempelten Ziegel der im I Jahrhundert n. Chr. in <i>Vindonissa</i> liegenden römischen Truppen', <i>Bonner Jahrbücher</i> , 163 , 76-150
Gresham, 1969	C. A. Gresham, 'Pennal', in V. E. Nash-Williams, <i>The Roman</i> Frontier in Wales, 2nd. edit. by M. G. Jarrett, 104-106
Grew, 1981	F. O. Grew, ed., 'Roman Britain in 1980. I: sites explored', Britannia, 12, 314-68
Grimes, 1930	W. F. Grimes, 'The works depot of the Twentieth Legion at Castle Lyons, Holt, Denbighshire', Y Cymmrodor, 41
Hartley, 1952	B. R. Hartley, 'Excavations at Heronbridge, 1947-8', J.C.A.S., 39, 1-20
Hartley, 1954	B. R. Hartley, 'Heronbridge excavations: bronze-worker's hearth', J.C.A.S., 41, 1-14
Hartley, 1981	B. R. Hartley, 'The early Roman military occupation of Lincoln and Chester', in A. C. Anderson and A. S. Anderson, eds., Roman Pottery Research in Britain and North-West
	Europe: papers presented to Graham Webster (British Arch- aeological Reports, International Series, 123 (i)), 239-47
Hartley and Kaine 1954	B. R. Hartley and K. F. Kaine, 'Heronbridge excavations: Roman dock and buildings', <i>J.C.A.S.</i> , 41 , 15-38
Higham, 1982	N. Higham, 'The Roman impact on rural settlement Cumbria', in P. Clack and S. Haselgrove, eds., Rural Settlement in the
Hinz, 1975	Roman North, 105-22 H. Hinz, 'Colonia Ulpia Traiana: Die Entwicklung eines
	römischen Zentralortes am Niederrhein', in H. Temporini and W. Haase, eds., Aufstieg und Niedergang der römischen Welt: Geschichte und Kultur Roms im Spiegel der neueren Fors- chung, II (4), 825-69
Hurst, 1976	H. Hurst, 'Gloucester (Glevum): A colonia in the West Country', in K. Branigan and P. J. Fowler, eds., The Roman West Country, 63-80
<i>I.L.S.</i>	H. Dessau, ed., Inscriptiones Latinae Selectae, 3 volumes, 5 parts, Berlin, 1892-1916
Jones, 1964	A. H. M. Jones, The Later Roman Empire, 284-602
Jones, 1976	R. F. J. Jones, 'The Roman military occupation of North- West Spain', Journal of Roman Studies, 66, 45-66
Kandler, 1977	M. Kandler, 'Zum Territorium legionis von Carnuntum', in J. Fitz, ed., Akten des XI Internationalen Limeskongresses, 145-53
Kelly, 1965	D. B. Kelly, 'Excavations at Watergate House, 1959', J.C.A.S., 52, 1-22
Kelly, 1976	R. S. Kelly, 'Metal-working in North Wales in the Roman period', Bulletin of the Board of Celtic Studies, 27, 127-47
Lewis and Reinhold, 1966	N. Lewis and M. Reinhold, Roman Civilization. Sourcebook II: The Empire
Liversidge, 1968	J. Liversidge, Britain in the Roman Empire
Manning, 1975	W. H. Manning, 'Economic influences on land use in the
	Highland Zone during the Roman period', in J. E. Evans.
	S. Limbrey and H. Cleere, eds., The Effect of Man on the Landscape: The Highland Zone (C.B.A. Research Report 11),
	112-16
Manning, 1981	W. H. Manning, Report on the Excavations at Usk 1965-76: the Fortress Excavations 1968-71
Margary, 1973	I. D. Margary, Roman Roads in Britain, 3rd edition
Mason, 1978	D. J. P. Mason, 'The extra-mural area', in T. J. Strickland and P. J. Davey, eds., New Evidence for Roman Chester

42	D. J. P. MASON
Mason, 1980	D. J. P. Mason, Excavations at Chester, 11-15 Castle St. and Neighbouring Sites, 1974-78. A Possible Roman Posting-
Mason, 1983	House (Mansio) D. J. P. Mason, 'Eaton by Tarporley Roman villa', Cheshire Archaeological Bulletin, 9, 67-72
Mason, 1984	D. J. P. Mason, The Canabae and Vici of Roman Britain, unpublished Ph.D. dissertation, University of Liverpool
Mason, 1987	D. J. P. Mason, 'Chester: the canabae legionis', Britannia, 18, 143-68
Mason, forthcoming	D. J. P. Mason, 'The Roman site at Heronbridge, near Chester, Cheshire: aspects of civilian settlement in the vicinity of legionary fortresses in Britain and beyond', Archaeological Journal, 145
Mócsy, 1953	A. Mócsy, 'Das Territorium legionis und die canabae in Pannonien', Acta Archaeologia Akademiae Scientarum Hung- aricae, 3, 179-99
Mócsy, 1967	A. Mócsy, 'Zu den prata legionis', in Studien zu den Militärgrenzen Roms: Vörtrage des 6 Internationalen Limes- kongresses in Süddeutschland (Beiheft Bonner Jahrbücher, 19), 211-14
Mócsy, 1972	A. Mócsy, 'Das Problem der militärischen territorien im Donauraum', Acta Antiqua Akademiae Scientarum Hungar- icae, 20, 133-69
Mócsy, 1974	A. Mócsy, Pannonia and Upper Moesia
Morgan, 1882	O. Morgan, Goldcliff and the Ancient Roman Inscribed Stone Found There
Müller, 1975	G. Müller, 'Die Ausgrabungen in Neuss von 1955 bis 1972', in Ausgrabungen in Deutschland (Römisch-Germanischen
Nash-Williams, 1939	Zentralmuseums Mainz, Monographien 1.1), 384-400 V. E. Nash-Williams, 'A new Roman mining site at Lower Machen, Monmouthshire', Archaeologia Cambrensis, 94, 108-10
Newstead, 1937	R. Newstead, The Roman station, Prestatyn: first interim report', Archaeologia Cambrensis, 92, 208-32
Newstead, 1938	R. Newstead, 'The Roman station, Prestatyn; second interim report', Archaeologia Cambrensis, 93, 175-91
Newstead, 1939	R. Newstead, 'Records of archaeological finds', J.C.A.S., 33, 5-117
Newstead, 1948	R. Newstead, 'Records of archaeological finds', J.C.A.S., 36, 49-172
Nowotny, 1937	E. Nowotny, 'Das Territorium legionis von Carnuntum', Der römische Limes in Österreich (Kaiserliche Akademie der Wissenschaften, Vienna), 18, 129ff.
Petch, 1933	J. A. Petch, 'Excavations at Heronbridge, 1930-31', J.C.A.S., 30, 5-45
Petch, 1936	J. A. Petch, 'Excavations at Pentre Ffwrndan, Fflint, 1932-4', Archaeologia Cambrensis, 91, 74-92
Petch, 1969	D. F. Petch, 'Chester', in V. E. Nash-Williams, The Roman Frontier in Wales, 2nd. edition by M. G. Jarrett, 33-42
Petrikovits, von 1952	H. von Petrikovits, 'Die Ausgrabungen in der Colonia Traiana bei Xanten', Bonner Jahrbücher, 152, 41-161
Petrikovits, von, 1960	H. von Petrikovits, Das römische Rheinland. Archaeologische Forschungen seit 1945 (Beiheft Bonner Jahrbücher, 8)
Petrikovits, von, 1961	H. von Petrikovits, 'Die Ausgrabungen in Neuss', Bonner Jahrbücher, 161, 449-81
<i>R.I.B</i> .	R. G. Collingwood and R. P. Wright, The Roman Inscriptions of Britain, I: Inscriptions on Stone

Robinson and Ward, 1975	D. J. Robinson and T. E. Ward, 'Excavations on the site of the Chester Telephone Exchange extension, 1970-71', J.C.A.S., 58, 41-51
Room, 1968	R. E. Room, 'Excavations at the Roman site of Ffrith',
D	Flintshire Historical Society Publications, 23, 82-4
Rüger, 1968	C. B. Rüger, Germania Inferior
Salway, 1981	P. Salway, Roman Britain
Schulten, 1894	A. Schulten, 'Das Territorium legionis', Hermes, 29, 481-516
Shrubsole, 1887	G. W. Shrubsole, 'The traffic between <i>Deva</i> and the coast of North Wales in Roman times', <i>J.C.A.S.</i> , new series 1, 76-90
Staehelin, 1948	F. Staehelin, Die Schweiz in römischer Zeit, 3rd edition
Taylor, 1922	M. V. Taylor, 'Roman Flintshire', Flintshire Historical Society Publications, 9, 58-96
Thomas, 1964	E. B. Thomas, Römische Villen in Pannonien
Thompson, 1965	F. H. Thompson, Roman Cheshire
Todorovic, 1956	
	J. Todorovic, 'Praistoriska nekropola na Rospi cupriji kod Beograda', Godisnjak Muzeja Grada Beograda, 3, 77-95
Tylecote, 1962	R. F. Tylecote, Metallurgy in Archaeology
Ulbert, 1960	G. Ulbert, 'Das römische Regensburg', in F. Bomer and L. Vait, eds., Germania Romana, I: Römerstädte in Deutschland, 64-77
Vetters, 1977	H. Vetters, 'Lauriacum', in H. Temporini and W. Haase, eds.,
	Aufstieg und Niedergang der romischen Welt: Geschichte und Kultur Roms in Spiegel der neueren Forschung, II (6), 355-79
Vittinghoff, 1968	F. Vittinghoff, 'Die Bedeutung der Legionslager für die Enstehung der römischen Städte an der Donau und in Dakien,' in <i>Studien zur europaischen Vor- und Frühgeschichte</i> (Festschrift H. Jankuhn), 132-42
Vittinghoff, 1970	F. Vittinghoff, 'Die Enstehung von städtischen Gemeinwesen in der Nachbarschaft römischer Legionslager — Ein Vergleich Leóns mit der Entwicklungslinien im Imperium Romanum, in Legio VII Gemina (hsg. v. Catedra de San Isidoro, Instituto Leonés de Estudios Romano-Visigoticos), 337-52
Vittinghoff, 1971	F. Vittinghoff, 'Die rechtliche Stellung der canabae legionis und die Herkunftsangabe castris', Chiron, 1, 299-318
Vyner, 1978	B. E. Vyner, 'Excavations at Great Bulmore, near Caerleon', in G. C. Boon, ed., <i>Roman Sites</i> (Cambrian Archaeological Association Monographs and Collections 1), 25-34
Wacher, 1974	J. S. Wacher, The Towns of Roman Britain
Watkin, 1886	W. T. Watkin, Roman Cheshire
Webster, 1953	G. Webster, 'The lead-mining industry in North Wales in Roman times', <i>Flintshire Historical Society Publications</i> , 13, 5-33
Weiss, 1913	J. Weiss, 'Bauinschrift aut Troesmis', Jahreshefte des Oesterreichischen Archaeologischen Instituts (Vienna), 16, col.
Whittick, 1982	209-210 G. C. Whittick, 'The earliest Roman lead-mining on Mendip
	and in North Wales: a reappraisal', Britannia 13, 113-23
Whitwell and McNamee, 1964	J. B. Whitwell and S. M. McNamee, 'Excavations at 46-50 Foregate St., 1961', J.C.A.S., 51, 1-19
Wilkes, 1969	J. J. Wilkes, Dalmatia
Wright and Richmond, 1955	R. P. Wright and I. A. Richmond, Catalogue of the Roman
and the themiliona, 1955	Inscribed and Sculptured Stones in the Grosvenor Museum
Zienkiewicz, 1983	D. Zienkiewicz, 'Great Bulmore', Archaeology in Wales, 23, 47-9
Zienkiewicz, 1984	D. Zienkiewicz, 'Great Bulmore', Archaeology in Wales, 24, 57-8