



MAP 3.2. THE FRONTIERS OF THE TETRARCHY AND THE NEW PROVINCES

Wallachia to the east were possible. Whether or not the new strategy was the right one to adopt from a conceptual standpoint, it is clear that its adoption would considerably reduce the military value of the Dacian salient.<sup>63</sup>

Such strategic conjecture can be validated with conclusive evidence in the case of the retreat in Tingitana. In North Africa, the recurrent attacks of the Mauri and the attacks of the Baquates in 240–45 culminated in a general attack by nomads and montagnards in 253–62, which affected Mauretania Caesarensis, Sitifensis, and Numidia—and perhaps Africa Proconsularis (modern Tunisia) as well.<sup>64</sup> Local punitive campaigns reestablished Roman control each time, but in 288 there was another outbreak affecting the region as a whole, and this time the empire could respond at last with large-scale measures.

Landing in Tingitania, directly across the narrow straits from Spain, Diocletian's junior Augustus, Maximian, brought an expeditionary army to North Africa, composed of Praetorian cohorts, *vexillationes* of the XI *Claudia* (from Aquileia), II *Herculia* (from Lower Moesia), and II *Traiana* (from Egypt), as well as German and Gallic *numeri*, Thracian recruits, and perhaps recalled veterans.<sup>65</sup> Operating in the grand manner, Maximian advanced across the full width of North Africa from Tingis to Carthage. There on March 10, 298, Maximian made a triumphal entry, after having defeated the Baquates, Bavares, and Quinquegentanei, pursued the Berbers of the Rif, Aurès, and Kabylie into their mountains,<sup>66</sup> and driven the nomad tribesmen back into the Sahara.<sup>67</sup>

Maximian's pacification offensive had been very successful, yet it was then that Volubilis and its *limes* were evacuated.<sup>68</sup> Here as on other sectors, there was logic in the unlikely combination of victory and retreat: victory had created the right conditions for the frontier reorganization dictated by empire-wide strategic considerations. Defeated, the barbarians could no doubt be reduced to dependence, and a buffer zone controlled by clients could be reestablished in front of the new *limites*. With so many tribesmen dead, the Romans might hope that the rest would respect the inviolability of Roman lands, at least for a time.

The retreat from the southern extremity of Egypt further substantiates the conjecture. In that sector, there is evidence that the new frontier line (hinged on the Elephantine) was protected by a client structure: the sedentary Nobades were established on the Nile in order to contain the pressure of the nomadic Blemmyes.<sup>69</sup> As before, a sound frontier was one strong enough to ensure the subjection of *strong* clients beyond it, clients who could reinforce the

frontier by relieving Roman troops of the burden of day-to-day defense against low-intensity threats. The new strategy no longer aimed at providing a forward defense, and it did not even absolutely require a glacis of reliable clients; it certainly no longer required forward positions and offensive salients.

In the language of modern commerce, the frontiers of the empire that emerged from the near shipwreck of the third century had been "rationalized": exposed salients, topographically weak but strategically useful, had given way to simpler river lines in Europe and shorter desert frontiers in North Africa. It was only in the East that a forward defense frontier was reestablished, once again with obvious deliberation. Although, after a poor beginning, Galerius had outmaneuvered and thoroughly defeated the Sassanid army in 297, Diocletian contented himself with the old frontier established by Septimius Severus, except for the addition of some minor satrapies across the Tigris (for which the pro-Roman king of Armenia, Tiridates III, was compensated at Persian expense, in Media Atropatene.)<sup>70</sup> Notably, Diocletian refrained from claiming land due east of Singara across the Tigris and south of the Jebel Sinjar line, lands that Rome had briefly held in the wake of Trajan's conquests after 115 and that were the very embodiment of that fateful overextension. Here, too, the frontier was complemented by client relationships: with Armenia, of course, and with the Iberian kingdom in the Caucasus, which was already strategically important and was destined to be still more so, as the danger emanating from Transcaucasia became more grave.

#### IV

##### Walled Towns and Hard-point Defenses

Rationalization was a necessary but insufficient condition for the implementation of the new strategy. Once Diocletian and his colleagues had restored the strength of the empire to the point that a *shallow* defense-in-depth on a provincial scale could be substituted for the deep "elastic defense" of the later third century, the fortifications of the frontier zones had to be changed. It was not enough to repair the fortresses, forts, and watchtowers of the Principate; mere bases for offensive forces were no longer adequate. Now it became necessary to build forts capable of sustained resistance, and these fortifications had to be built in depth, in order to protect internal lines of communication. Instead of a thin perimeter line on the edges of provincial territory, broad zones of military control had to be created to frame the territory in which civilians could live in security, as civilians.

An extreme example of this pattern was the province of Palaestina III (Salutaris), which included the Negev and the southern half of the former province of Arabia, and which was organized essentially as a military zone. There, the *limes* did not exist to protect a province, but rather the province existed to sustain the *limes*, which served a broad regional function in protecting the southern Levant from nomad attacks. Articulated in depth on the inner line (Gaza-Beersheba-Arava) and the outer perimeter (Nitzana-Petra), and extending south from Petra to the Red Sea, the defenses of Palaestina Salutaris were "studded with fortifications," all defensible "hard-points" built in the new style.<sup>71</sup> At Mesad Boqeq, for example, a typical Diocletianic *quadriburgium* has been found: it is small (22 × 22 meters) and has four massive, square towers projecting outward.<sup>72</sup> Water sources and signal stations were also fortified in the province-wide defended zone, and the few roads were also carefully protected. For example, the critical Scorpion Pass, which provided the main westerly link between Aila (Elat) on the Red Sea (where the legion X *Fretensis* was stationed ca. 300) and the north, was guarded by road forts at either end, a halfway station in the middle, lookout towers at the approaches, and a control point at the highest elevation.<sup>73</sup>

At the opposite end of the imperial perimeter, in northwest Europe, equal care was taken to fortify important highways leading from the frontiers to the interior. Under the principate, important highways had been lightly guarded by soldiers detached from their legions for these police duties (*beneficarii consularis*).<sup>74</sup> But from the second half of the third century onward, both normal forts and small road forts (*burgi*) began to be built on the highways in the rear of the frontiers, as was the case on the Cologne-Tongres-Bavay road (which continued to the Channel coast at Boulogne),<sup>75</sup> and the highways from Trier to Cologne and from Reims to Strasbourg.<sup>76</sup> In the wake of the great Alammanic invasion of Italy in 259–60, which the emperor Gallienus finally defeated at Milan, and the invasion of the Iuthungi a decade later, which Aurelian crushed in the Po valley, the defense of the transalpine roads became an important priority. Its goal was erection of multiple barriers across the invasion corridors leading to northern Italy.

The effort, which may have begun in a systematic manner under the tetrarchy, was continued thereafter whenever there was sufficient stability for long-term investments to be made, as late as the latter half of the fourth century.<sup>77</sup> The barriers were designed to impede the very deep penetrations that had characterized the third-century attacks, such as those of the Alamanni in 259, which had reached as far as southern France and Spain as well as northern Italy.<sup>78</sup> Bands of pillaging Alamanni had then reached as far as Lyon

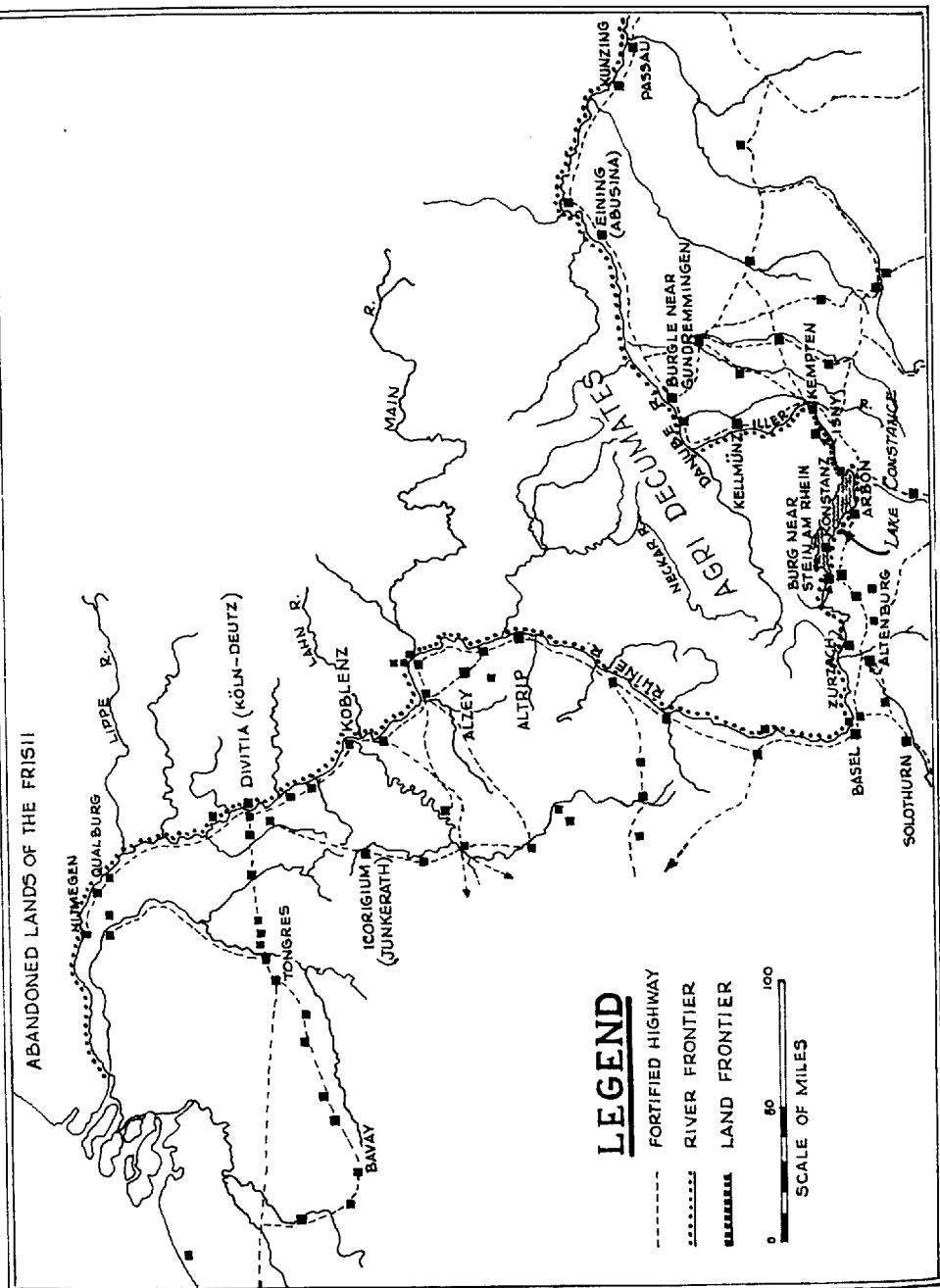
and even Clermont-Ferrand in France, and down the Rhone valley and across into Spain. (Coin hoards of the period have been found in northeastern Spain.)<sup>79</sup>

At the initial breaching point the barbarians would have been concentrated and, therefore, formidable, but in subsequent forays they must have been dispersed. Hence the logic of the small road forts (and small civilian refuges), which could have been of little use in the face of a concentrated mass of barbarians like the one defeated by Gallienus near Milan in 260.<sup>80</sup> These road forts and refuges also provided some security from a new internal threat: bands of brigands (*bagaudae*), the product of a society oppressive and exploitative even in near-collapse.<sup>81</sup>

At the tactical level, there is a striking difference between the forts and fortresses of the principate and the strongholds of the latter empire. The latter are far from homogeneous, and within the period from Diocletian to the fifth century there are major differences in pattern. (The inadequacy of dating methods makes chronological distinctions difficult.) For our purposes, however, the entire period of late-Roman fortification, from the second half of the third century to the last sustained effort of Valentinian a century later, may be treated as a whole.

First, there is a difference in siting. While some fortifications were still built for residential and logistic convenience, i.e., in close proximity to highways and on flat ground, most late-Roman fortifications were positioned, whenever possible, for tactical dominance. The reason for the change was, of course, that the concentrated forces of the principate could deal with the enemy by taking the offensive, but the smaller frontier garrisons of the late empire would often be obliged to resist in place, awaiting the arrival of provincial, regional, or even empire-wide reinforcement. Accordingly, naturally strong positions were of prime importance. Examples of this positioning may be found in Basel, Zurzach, Burg near Stein am Rhein, Arbon, Kostanz, Kempten and Isny on the Upper Rhine and in Raetia. On the Lower Rhine, where the ground is mostly flat, forts were built on the few available hills—even if these locations were not otherwise suitable—as at Qualburg and Nijmegen.<sup>82</sup> This concern for easily defensible terrain is further manifest in the siting of the fortifications of the tetrarchic road fort and patrol system on the Syrian sector, based on the forward line of the *Strata Diocletiana* running from Palmyra all the way south towards the Gulf of Elat on the Red Sea.<sup>83</sup>

A second clear-cut difference is in the ground plans of late Roman fortifications. Old-style rectangles with rounded ditch defenses naturally persisted, since in many cases old fortifications remained in



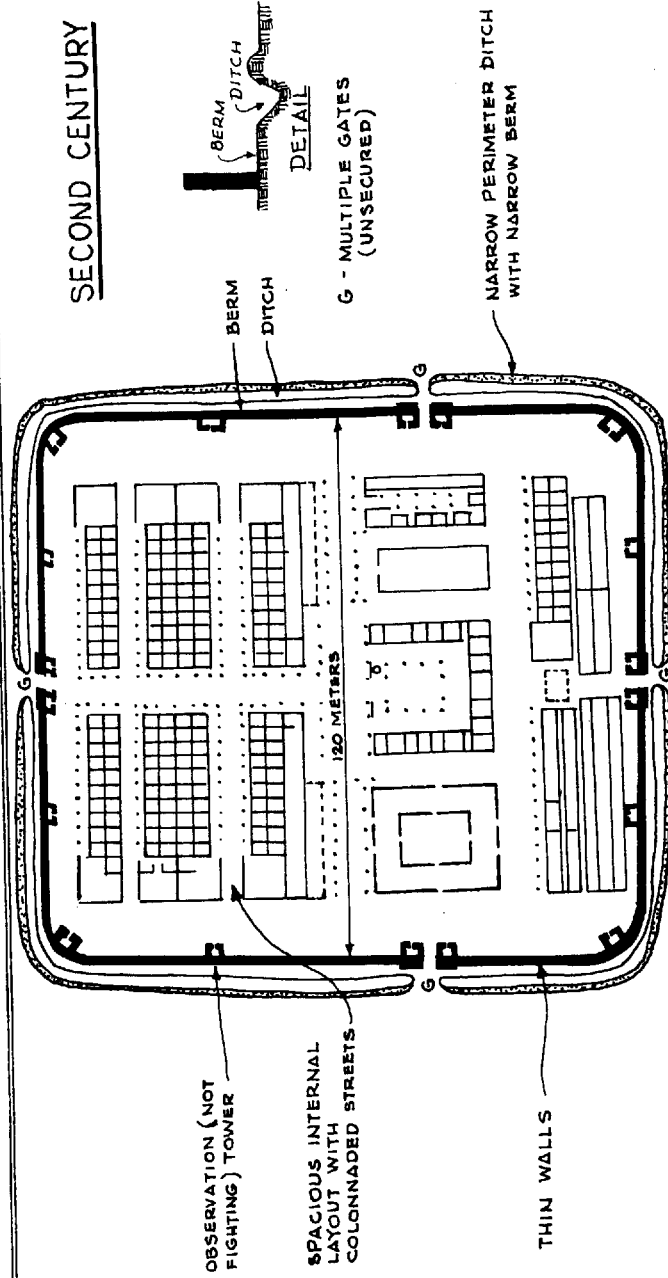
MAP 22 THE DEFENSE IN DEPTH OF THE GERMAN FRONTIER

use, but the square layout became predominant, together with irregular quadrilaterals (Yverdon), rough circles (Jünkerath) and bell-shapes—where the broader side rested on a river or the sea (Koblenz, Altenburg, Solothurn, Altrip).<sup>84</sup> The advantage of proximate circles and proximate squares over the older rectangular pattern is, as noted before, the shorter length of the wall circuit for any given internal area. The perfect circle—theoretically optimal—was normally avoided because it was difficult to build. The irregular wall circuits that were to become characteristic of medieval structures began to appear in places where the walls followed the irregularities of the ground—high, defensible ground, that is (as in Vermania-Isny, Pevensey, and Pilismarót on the Danube, among others).<sup>85</sup> This pattern also occurs where irregular river lines were used as part of the circuit.<sup>86</sup>

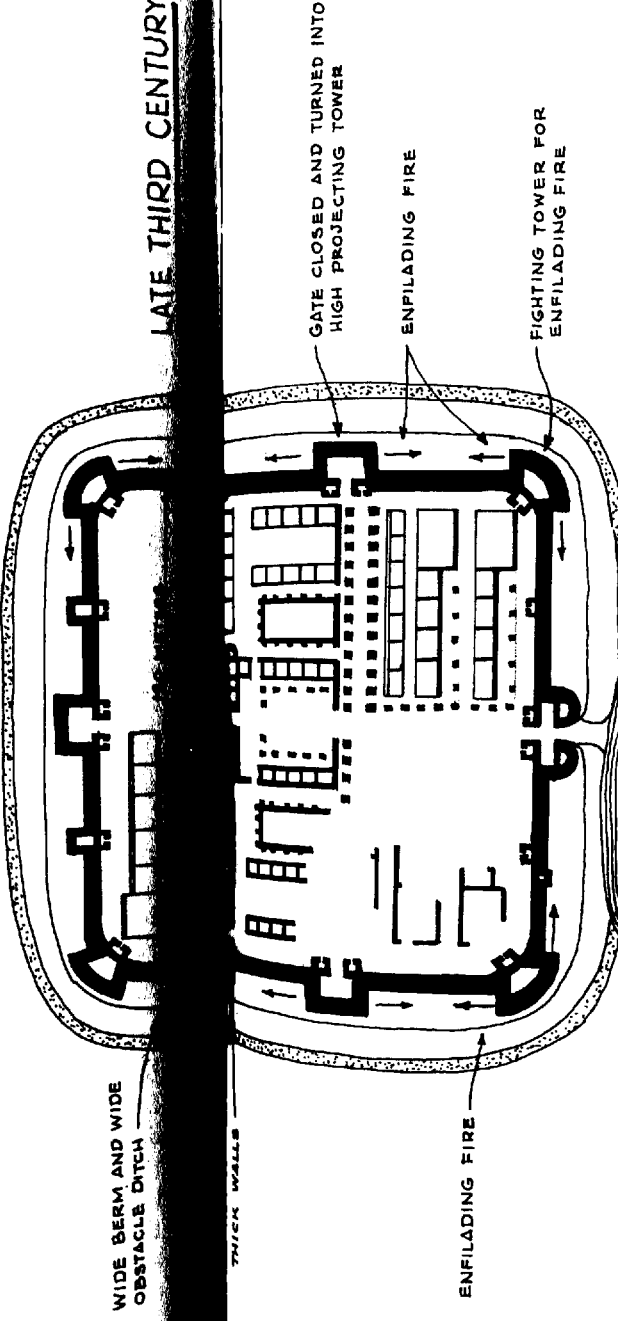
Another important difference is in the outer defense structures, the perimeter ditches and berms. Instead of the narrow, V-shaped ditches with narrow berms—only seven or eight feet wide—characteristic of first and second century structures, we find much wider berms, from twenty-five to as much as ninety feet wide; while the ditches, single or double and often flat-bottomed, were also much wider, ranging from twenty-five to forty-five feet or more.<sup>87</sup> Wide ditches served to keep the rams and siege engines of the attackers away from the wall. The Sassanid armies, unlike those of the Arsacids, were equipped with siege engines,<sup>88</sup> but the more important strategic change was on the Roman side: small garrisons were now to hold out on their own, and even the common run of barbarians who had never mastered sophisticated siege techniques were no doubt capable of using improvised rams. The wide ditches, then, were intended to impede the close approach of battering devices to the walls. These walls were made thicker, as well: instead of the standard five feet, late-Roman fort walls were commonly ten Roman feet thick, or more.<sup>89</sup> When older forts remained in use, the walls were simply thickened.<sup>90</sup>

The wide berms, on the other hand, reflected a significant tactical change. Research has shown that in the fortifications that Aurelian built around Rome, and in the late-Roman walls of Roman towns in Britain, Gaul, and elsewhere in the empire, the fire power of the defenders was now augmented with static artillery, both stone-throwers and arrow (or bolt) shooters.<sup>91</sup> By the fourth century, the legions had lost their organic complement of artillery, and aside from the separate artillery legions (mentioned in the *Notitia Dignitatum*), the artillery seems to have been used in large numbers only for fixed defenses (*tormenta muralia*).<sup>92</sup> Since these weapons, positioned on

## SECOND CENTURY



## LATE THIRD CENTURY



WALL PROJECTED FOR ENFILADING FIRE

## LATE FOURTH CENTURY

FORT RELOCATED ON DEFENSIBLE HIGH GROUND

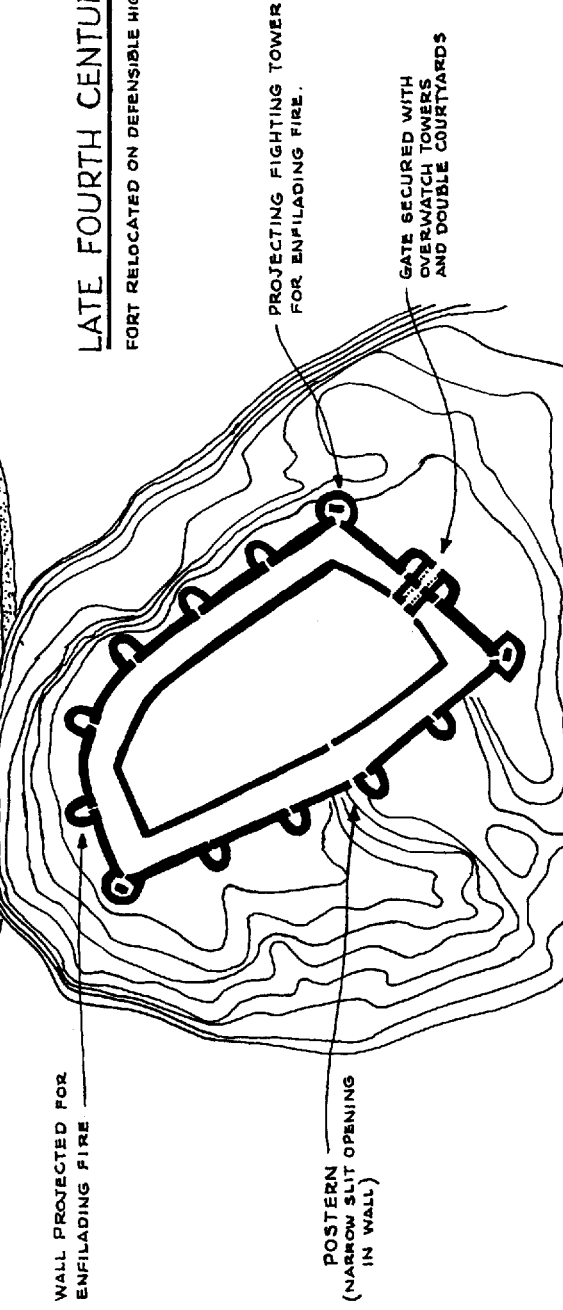


FIG. 3.4. THE CHANGING PATTERN OF ROMAN FORTIFICATION

towers and ramparts, could not be sharply angled, their fire could not be directed down at attackers close to the walls. The broad berms were designed to hold the attackers in an outer zone that could be covered by overlapping missile fire.<sup>93</sup>

A more sophisticated device was an elevated floor-level inside the fort; this was intended to counter mining, a technique that attackers were apt to use when they lacked siege engines and when the defense lacked the fire power needed to keep them away from the wall. Found in forts at Bavay, Alzey, and Altrip, among others,<sup>94</sup> this device suggests combat conditions akin to those of medieval sieges: an offense incapable of breaching walls and a defense equally incapable of striking at the besiegers, even when they closely invested the walls.

From the third century to the fifth, the deployment of forces evolved through several distinct phases, but it is clear that the large and strategically concentrated frontier garrisons typical of the linear strategy of the Principate were thinned out even while the size of the Roman army was increasing. There were more troops than before, but these were no longer deployed exclusively on the frontier line itself. Hence late-Roman forts and fortresses frequently housed far fewer men than their first- and second-century predecessors (the outpost forts on Hadrian's wall being a notable exception). In any case, when these fortifications came to serve as defensible hard-points rather than as bases, the length of the wall circuits and the internal area were reduced to a minimum. For example, Vindonissa, first-century base of the legion XI *Claudia*, was abandoned ca. 100 and subsequently dwindled into a village; ca. 260 an attempt was apparently made to recondition the walls of the spacious legionary fortress, but they were much too long, and the attempt was abandoned. Finally, ca. 300 a new fort, small and strong, surrounded by a broad triple ditch, was built within the old perimeter. At Abusina (now Eining) on the Danube, near the eastern terminus of the Antonine artificial *limes*, a small fort (37 × 48 meters) was built within the spacious perimeter of an old cohort fort. And the evolution of the fort of Drobeta is an even more striking example of this secular transformation.<sup>95</sup>

Fighting towers, built high to enhance missile fire, located not on the wall line itself but projecting outward, are typical of hard-point defenses. Accordingly, the surveillance and decorative towers of first and second century structures gave way in late-Roman times to towers that took various shapes but almost invariably projected out from the wall, in order to offer lateral fields of fire to cover intervening wall segments. Fan-shaped towers, like those at Intercisa

(Dunapentele) on the Danube, and polygonal projecting towers, like those at Eburacum (York), were built, but round and square towers were more common.<sup>96</sup>

Under the principate, the gates of towns and fortresses were only meant to impress; in late-Roman conditions, however, gates became weak points that required special protection. Since forts were often held by small garrisons, and since static forces (which must often have failed to patrol aggressively) were vulnerable to surprise, strongholds were susceptible to sudden attacks, especially in places where barbarians were allowed to congregate for markets in times of apparent peace. Such considerations led to innovations in gate design: double sets of guard-towers (e.g., at Divitia, opposite Cologne); reentrant courtyards, where access to the fort proper is by way of a guarded internal yard (Bürgle, near Gundremmingen); masked gates, concealed by circular ramparts (e.g., near Kellmünz); and finally posterns, i.e., narrow slits at the base of towers or walls designed to allow the defenders to sally out unobserved; since the slits were quite narrow, they could easily be blocked by even a handful of defenders (Icorigium-Jünkerath).<sup>97</sup>

In comparing the ground plans of Roman and medieval fortifications, one finds the most obvious difference in the siting of the internal buildings. The standard Roman practice (well into the fourth century, it seems) was to separate the living quarters from the outer walls with a broad roadway (*via sagularis*). As in the classic marching-camp layout, the purpose was to protect the men on the inside from missiles fired from beyond the perimeter ditch. Although leaving room for a *via sagularis* would make the fort, and the all-important wall circuit, larger, this practice continued until the reign of Constantine, if not longer. (The fort at Divitia, mentioned above, features a *via sagularis*.) But from the mid-fourth century onward, barracks began to be built on the inner face of the walls, for added protection to both. This made for less well-lighted and comfortable quarters, but it was an economical way of thickening the walls. Thus we find the fort of Alzey, spacious but with built-up walls; the late Valentinian fort at Altrip, which is more compact; and the fort at Bürgle near Gundremmingen, which already has the internal layout, external circuit, and hilltop siting typical of medieval castles.<sup>98</sup>

The cramped quarters and irregular shapes of the new structures suggest that it was not only the tactics but the entire lifestyle of the soldiers within that had undergone a vast transformation since the days of the principate. This need not necessarily imply a decline in tactical effectiveness, for in the new defense system the functions of static and mobile troops were complementary. In fact, some static

elements of the system survived in isolation long after the collapse of the whole: St. Severinus encountered the forts of Künzing and Passau when traveling across Raetia in 450.<sup>99</sup>

Once the frontiers were no longer defended preclusively, it became necessary to defend assets of value *in situ*, on a local scale and with local efforts. Just as the roads were secured by constructing road forts, everything else of value had to be secured also, or else it would be exposed to attack and destruction during the inevitable interval between the hostile penetration and successful interception of the defense-in-depth sequence. No volunteer civilian militia was organized systematically,<sup>100</sup> for obvious political reasons, and local defense essentially meant local fortification. Roving barbarian bands and home-grown marauders (*bagaudae*), unskilled and unequipped for siege warfare, could be kept at bay by stout walls manned by whatever stray soldiers were at hand, or by the citizenry armed with improvised weapons.<sup>101</sup>

Along with the undefended cities of the West, whose lack of wall circuits until the third century was evidence of both prosperity and security,<sup>102</sup> there had always been walled cities. In the East, wall defenses were the norm, since the *limites* were "open." Even in the West some cities did have walls long before any were needed. In Gaul, for example, the walls of Autun were Augustan; Cologne received a wall circuit ca. 50, and Xanten (Vetera) ca. 110, in the secure days of Trajan's principate.<sup>103</sup> But these walls were built either for decorative purposes, for the sake of civic dignity, or, at most, for police purposes; they were certainly not built for military reasons, and they were not meant to cope with determined attacks.<sup>104</sup> Hence the wall circuits were long and therefore difficult to defend; their purpose being what it was, they naturally enclosed the entire city and not merely its more defensible parts. The walls were generally thin, five feet or so in width; the towers were primarily decorative; and berms and ditches were narrow.<sup>105</sup>

After the catastrophic invasions of the mid-third century, all this changed. In northwestern Europe, in the wake of the breakdown of the Rhine defenses in 254 (when both Alamanni and Franks broke through the *limes*), and especially after the great Alamannic incursion of 259–60,<sup>106</sup> the cities of the Germanies, Raetia, and Gaul hurriedly acquired walls. These were very different from the previous enceintes. The enclosed areas were drastically reduced in an effort to achieve reasonable densities with the available military manpower: in Gaul, both Paris and Périgueux had walls enclosing less than twenty acres.<sup>107</sup> In addition, the walls became functional, i.e., thick and heavily protected. All available masonry was used: in the forty-acre

enceinte of Athens, built in the wake of the Herulian attack of 267, a thickness of more than ten feet was achieved by filling in two wall facings with broken pieces of statues, inscribed slabs, and blocks removed from former public buildings.<sup>108</sup>

The civic structures built in former times of prosperity and security were sometimes incorporated in the new wall perimeters as complete units: a temple at Beauvais was used as part of the circuit, as was an amphitheatre in Paris and the main public baths at Sens.<sup>109</sup> In some cases even the cannibalization of the city infrastructures did not suffice to protect its core. At Augst (Augusta Raurica), which had developed as an open city with "fine public buildings—forum, basilica, temple of Jupiter, theatre, baths, industrial quarters, [and] public water-supply,"<sup>110</sup> an attempt was made at first to protect the entire city; but after 260, in the wake of the Alamannic incursions, the city was largely abandoned. A further attempt was made to defend the highest part of the plateau on which the city was built by cutting it off with ditches from the lower slopes and turning terraces into walls with cannibalized blocks, but this failed also. By the end of the third century Augst no longer existed, and only a small river fort on the Rhine remained.

Elsewhere relocation was more successful, but it entailed the abandonment of large fixed investments; the change sometimes reduced the civil population to its earlier, savage state. Fortified hilltop villages (*oppida*) had housed the barbarians before Roman power had arrived on the scene, and similar structures now housed the Romanized provincials. In the case of the Horn (near Wittnau) in Raetia, a prehistoric rampart across a narrow neck of high ground was refortified in the late third century as a refuge,<sup>111</sup> and numerous examples of private refuges can be found in Gaul, the Germanies, Raetia, Noricum, Pannonia, and Dalmatia.<sup>112</sup> Where the lack of time or of suitable defensible ground precluded the relocation of even a diminished city life, extinction followed. This was particularly true in the case of port cities like Leptis Magna, which obviously could not have abandoned the sea-coast even if suitable refuge terrain had been available.<sup>113</sup>

In some cases, cities were so reduced in size, and defenses became so elaborate, that they gradually became forts—or at least became indistinguishable from forts. In the East, garrisons had long been housed in cities, or rather, in specific areas of cities. Now the pattern became more general, extending from London to Chersonesus on the Black Sea, and from Regensburg on the Rhine to Tiaret in the Sahara.<sup>114</sup> Since some troops were simultaneously becoming part-time urban militiamen or static farmer-soldiers, there was an obvious



and regressive convergence between civilian and military life: cities were becoming forts, and their inhabitants, involuntary soldiers on occasion; and forts were becoming towns inhabited by artisan-soldiers, merchant-soldiers, or farmer-soldiers. In the case of the *Limes Tripolitanus* (in modern Libya) with its *centenaria*—small fortlike farmhouses (or agriculturally self-supporting fortlets?)—the mixing of roles is complete.<sup>115</sup>

In arid areas, concentration was imposed on rural life by the water supply, so the conversion of rural settlements into defensible, fortified hard-points presented no real difficulty. On the other hand, where water is easily available as is the case in most of Europe, rural life was not naturally concentrated, but widely diffused. Its local protection, therefore, presented a problem that could not be solved economically. The emperor might have a wall built to enclose an estate 220 kilometers square,<sup>116</sup> but the ordinary farmer could not hope to enclose his fields with walls, and if he did, he would not be able to defend them. Private landlords were in a middle position. If rich enough, they could afford to build watchtowers to provide early warning of attack, and they could fortify farmhouses and granaries; if they had enough field hands, they could even organize private armies.<sup>117</sup>

The empire was primarily a supplier of security. Circumstances forced it to exact a higher price for this commodity after the second century, but the price need not have undermined the empire's worth to its subjects had it been able to continue to provide standards of security as high as the cost. The walled cities and the defended farmhouses of the late empire illustrate the kind of security that could be provided by a defense-in-depth, even a successful one. But in order to measure the true societal costs of the system, we should have to count the unknown number of small holdings in the open countryside that had to be abandoned. Cities, though walled and diminished, could survive, and so could the farmhouses and villas of the men of substance; it was the independent small farmer and the small estate that the invasions swept away in vast tracts of the empire.

## V

### Border Troops

Under the principate, the primary frontier-defense forces were the *alae* of auxiliary cavalry and the cohorts of infantry, later supplemented by the ethnic *numeri*. Lower in status than the legionary infantry, and less well paid, these troops were the principal active

element in the system of frontier defense. The legions could not have played a major role in the forward interceptions and minor skirmishing that characterized border warfare, since they were not mobile enough for such tasks. The sort of mobility that border fighting required would have been a most inefficient attribute in the legions, whose chief functions were to stabilize the borders *politically*, by virtue of their commanding presence, and to guarantee the security of their sectors against the rare contingency of large-scale enemy offensives.

Units described as legions continued to serve in the imperial army until the fifth century and even later, but from the third century onward their importance in the army as a whole steadily declined. At the same time, the *alae* and *cohortes* as well as the *numeri* either underwent a gradual transformation into static forces or else disappeared suddenly in places where the frontiers were utterly overrun. There is much controversy over the timing and nature of this transformation<sup>118</sup> and its results.<sup>119</sup> One thing, however, is certain: in the course of the fourth century,<sup>120</sup> the full-time troops that had guarded the borders using mobile and offensive tactics gave way to part-time peasant-soldiers (*limitanei*) who farmed their own assigned lands and provided a purely local and static defense.

Since the thin line of auxiliary "forts" and legionary "fortresses" along the perimeter had gradually been replaced by a much broader network of small, fortified hard-points in order to support an evolving strategy of defense-in-depth, the fact that mobile *alae* and *cohortes* had given way to scattered groups of static *limitanei*<sup>121</sup> need not have resulted in a decline in the effectiveness of the troops. For the new strategy required, above all, soldiers who would hold out in their positions; only if these positions were held could a collapse of the system into an elastic defense be avoided. And men who have their own families and possessions to protect *in situ* should make capable defenders.

In modern times, military-agricultural colonies have proved to be useful and economical agents of border defense in places and times as diverse as the Transylvania of the eighteenth century, the Volga steppe of the nineteenth, and the Israeli Negev of today. In each case, self-reliant farmer-soldiers could be counted upon to deal independently with localized infiltration and other low-intensity threats, while being ready to provide *points d'appui* for mobile field armies of regular full-time troops in the event of large-scale war. In principle, therefore, there is no reason to assume that the emergence in the Roman Empire of frontier forces consisting of farmer-soldiers reflected either local degeneration, official neglect, or a politically



motivated relaxation of discipline that went so far as to require of soldiers neither discipline nor training, but only their oath.<sup>122</sup>

Much would depend on the general state of society and on the overall security situation. Much would also depend on the quality of the supervision exercised over these farmer-soldiers, the *limitanei*. It is possible that under the tetrarchy, provincial troops (as opposed to the central field armies) came under a system of dual control, with the *limitanei* under the supervision of the provincial governor (*praeses*) and the mobile elements of each frontier province (legions and cavalry units) under the control of the *dux*, the senior military official (though both posts were sometimes filled by one man). This supposedly facilitated the localized supervision of frontier security and freed the *dux* from the burden of supervising immobile forces that could not, in any case, play a useful role in mobile warfare.<sup>123</sup> The state of the evidence is such that controversy persists over the entire notion of dual command.<sup>124</sup> *A priori*, it would seem that separating administration of the *limitanei* from that of the mobile cavalry *equites* and legions would be calculated to encourage the localization of the *limitanei* and the further degeneration of their military role. In order to maintain the efficiency of small groups of isolated farmer-soldiers, a system of regular and detailed inspection, as well as the frequent supervision of elementary training, would have been essential. Soldiers must regularly repeat fighting drills, not because they are apt to forget them, but because otherwise they will not use them in actual combat. But it is unlikely that the officials in charge, whether civilian *praesides* or military *duces* (or even a post-Constantinian *dux limitis*, whose duties concerned frontier defenses exclusively<sup>125</sup>) were adequately staffed to inspect the scattered outposts of the *limitanei* regularly.

The quality of the *limitanei* is also likely to have been influenced by the quality of the full-time troops stationed in their sectors. If these were well-regarded mobile forces who were always apt to be called away on campaign and were capable of fighting effectively, it is likely that some of their skills and even some of their spirit would be transmitted to the part-time farmer-soldiers in the sector. If, on the other hand, even the nominally full-time units had deteriorated into a territorial militia or simply into a static mass of pensioners unfit for serious campaigning, then the degeneration of the *limitanei* would probably be accelerated.

It is impossible to assess the quality of static border troops at different times and in different parts of the empire. Some *limitanei* may indeed have "spent most of their time on their little estates . . . and fought . . . like amateurs,"<sup>126</sup> and yet the particular *limitanei*

so characterized successfully ensured the defense of a broad sector of Tripolitania (where no other forces were deployed) until the middle of the fourth century.<sup>127</sup> To say that the *limitanei* were useless implies *a fortiori* that the fixed defenses they manned must have been useless as well; this would apply particularly to the great complex of trenches, walls, towers, and irrigation works of the *Fossatum Africae*. Yet the records of imperial legislation testify to the great concern of the central authorities for the maintenance of the *Fossatum* as late as 409,<sup>128</sup> and only powerful memories of its effectiveness can explain the fact that in 534, following the reconquest of North Africa, Justinian ordered that the ancient *Fossatum* be rehabilitated and that *limitanei* be recruited and deployed once again to man the system.<sup>129</sup>

If one compares the part-time *limitanei* of the fourth century with the legionary infantry of the best days of the principate, the former may indeed appear grossly inferior and even useless. But such a comparison overlooks the fundamental change in the overall strategy of the empire, which now required that troops be static to hold fixed points in support of the mobile forces that were to maneuver between them. Training, discipline, and mobility were certainly required of the latter, while only stubborn resilience was required of the former. Their endurance obviously impressed Justinian, and it should impress us: remnants of a local defense network survived, even in much-ravaged Raetia, into the fifth century.<sup>130</sup>

## VI

### Provincial Forces

Under the principate, all the forces of the army but for the 7,000 men of the Praetorian and Urban cohorts were "provincial" in the sense that they were ordinarily deployed for the defense of particular provinces. These forces consisted exclusively of full-time units, legions, *alae* of cavalry, *cohortes* of infantry, and mixed *cohortes equitatae*. There was neither a part-time border force of *limitanei* nor a regular mobile reserve, either regional or empire-wide.

By the time of Constantine in the fourth century the pattern of provincial troop deployments had been transformed: the *limitanei* had appeared and the auxiliary *alae* and *cohortes* had disappeared. Units described as legions remained, but these were evidently much smaller; they were no longer deployed in single vast bases but were fragmented into permanent detachments.<sup>131</sup> New types of units, cavalry *cunei* and infantry *auxilia*, made their appearance, both perhaps 500 strong.<sup>132</sup> Like the *limitanei*, all these provincial forces came under the sector commander, the *dux limitis*, but they remained full-time

regular soldiers with a status between that of the peasant *limitanei* and the élite empire-wide field forces, the *comitatenses*.<sup>133</sup> This evolution, which was to result during the fourth century in a further stratification of the forces, itself began with a series of transformations originating in the third century.

Until the deluge of the third-century invasions, the legions had been the backbone of the Roman army, and their deployment had hardly changed since the Hadrianic era. At the beginning of the third century, the II *Trajana* was still in Egypt; the X *Fretensis* and VI *Ferrata* still in Palestine; the III *Cyrenaica* was in Arabia; the old III *Gallica* in the new Syrian province of Phoenice; IV *Scythica* and XVI *Flavia firma* remained in Syria proper; the new Severan legions, I and III *Parthica* (and possibly IV *Italica*) were on the new Severan frontier in Mesopotamia. XV *Apollinaris* and XII *Fulminata* were in Cappadocia. On the Danube, I *Italica* and XI *Claudia* held Lower Moesia; IV *Flavia* and VII *Claudia* were based in Upper Moesia; V *Macedonica* and XIII *Gemina* were in Dacia and I and II *Adiutrix* in Lower Pannonia; X *Gemina* and XIV *Gemina* held Upper Pannonia, while the two legions raised by Marcus Aurelius held the rest of the Danubian frontier, with II *Italica* in Noricum and III *Italica* in Raetia. The I *Minervia* and XXX *Ulpia* were in Upper Germany, and the VIII *Augusta* and XXII *Primigenia* in Lower Germany. Britain, now divided into two provinces, had II *Augusta* in superior and XX *Valeria Victrix* and VI *Victrix* in inferior; VII *Gemina* was still in Spain, and the III *Augusta* remained the only legion in North Africa deployed in Numidia.

The deployment of the legions had thus changed remarkably little from the time of Hadrian: the II and III *Italicae* had been sent after 165 to Noricum and Raetia, respectively, and the three Severan legions, I, II, and III *Parthicae*, had been added. These additions brought the legionary force to thirty-three units—possibly thirty-four, if the uncertain IV *Italica* supposedly raised by Severus Alexander in 231 is counted. One of these new legions, the II *Parthica*, was deployed in Rome, of which more below, and the rest were, logically enough, deployed in the newly conquered province of Mesopotamia—new legions for new frontiers.

This, then, is the structure that was submerged by the tempest of the third century. Given the multiple military disasters that ensued after the defeat of Decius in 251, we may presume that by then the legions had lost their legendary efficiency.<sup>134</sup> This must remain no more than a presumption, however, since we have no evidence on the magnitude of the threat, which may well have been far greater than that to which the second-century legions and their predecessors had been exposed. As we have seen, the *qualitative* change in the threat had certainly been most adverse.

Of the legions of the Severan army, only the VI *Ferrata* of Palestine and possibly the III *Parthica* of Mesopotamia seem to have utterly disappeared during the half century of travails that intervened between the death of Severus Alexander in 235 and the accession of Diocletian in 284.<sup>135</sup> More than a century after Diocletian, 188 "legions" of all types were listed in the *Notitia Dignitatum*, but this bureaucratic survival is deceptive. The large combat units of the principate had ceased to exist. The "legions" of the late empire consisted of perhaps 1,000 men in the mobile field legions and 3,000 or so in the territorial legions, and possibly fewer.<sup>136</sup> Moreover, their men were not the select and highly trained heavy infantry that the original legionnaires had been, and they did not have the equipment, training, or discipline to function as combat engineers<sup>137</sup>—by far the most successful role of the legions of the principate. Nor was artillery any longer organic.<sup>138</sup> In other words, these were not legions. Instead, the units were essentially light infantry formations, equipped as the *auxilia* had been, with spears, bows, slings, darts and, above all, the *spatha*, the barbarian long sword suited for undisciplined open-order fighting.<sup>139</sup> Clearly, such forces were not the superior troops that the legionary forces of the principate had been.

This decline did not occur suddenly during the late fourth century, though most of our evidence dates from that time. The legions that survived the deluge of the third century must have done so more in form than in content. Depleted through the successive withdrawal of *vexillationes* that never returned to their parent units, weakened by breakdowns in supply and command, repeatedly overrun along with adjacent tracts of the *limes* (and sometimes destroyed in the process), the legions must have been drastically diminished and greatly weakened by the time of Diocletian. Additionally, many of the auxiliary units, both *alae* and *cohortes*, either disappeared or survived only as *limitanei*, that is, purely territorial forces incapable of mobile field operations.

As a result of these changes, until Diocletian reformed the legions, the strategy based on forward defense could no longer be implemented (for it required a net tactical superiority at the local level), while a proper defense-in-depth strategy could not be implemented either, since the latter required a deep, secure network of fortified outposts, self-contained strongholds, and road forts. Inevitably, the only kind of defense that could be provided during the crisis years (ca. 250–ca. 284), was an elastic defense. While it would allow the enemy to penetrate, sometimes deeply, it would at least ensure the ultimate security of the imperial power (though not of imperial territory) if sufficiently powerful field armies could eventually be assembled to defeat the enemy, wherever he had reached. This could entail

fighting Alamanni before Milan and Iuthungi after they had threatened even Rome. Powerful field armies including much cavalry were indeed assembled, and the imperial power thereby survived, but it survived only at the cost of abandoning civilian life and property to the prolonged ravages of the barbarians.

Diocletian was not content with this: his goal was to reestablish a territorial defense. This defense was certainly not to be *preclusive*, but it was to be at least a *shallow* defense-in-depth, in which only the outer frontier zones, not the imperial territory as a whole, would be ordinarily exposed to the ebb and flow of warfare. In his attempt to attain this end, Diocletian tried to curtail the dynamics of incursion and *post facto* interception (within imperial territory) by maintaining fortified bridgeheads intended to support the early interception of enemy attacks on the far side of the frontier.<sup>140</sup>

As already established, there were two preconditions for a successful defense-in-depth strategy: first, the organization of a resilient network of fortifications laid out in depth; and second, the deployment of sectoral forces sufficiently powerful to deal effectively with local threats. These preconditions were satisfied by a vast fortification-building effort that spanned the continents. "Quid ego alarum et cohortium castra percenseam toto Rheno et Histri et Euphratae limite restituita," cried the panegyrist, while the chronicler Malalas in the sixth century retained a memory of Diocletian's fortification-building effort in the East, a line of forts from "Egypt" (Arabia?) to the Persian frontier.<sup>141</sup> Modern archeology has substantiated the claims that the ancients made on Diocletian's behalf.<sup>142</sup> On three sectors the resulting structures are of particular interest.

The fortified *Strata Diocletiana*, built after the Persian war, between 293 and 305, reached the Euphrates from the southwest by way of Palmyra and provided a patrolled frontier between the Bostra-Damascus axis and the desert.<sup>143</sup> Upon this road frontier, the positions of three infantry cohorts (out of five) and of two *alae* (out of seven) have been identified.<sup>144</sup> Since this frontier had always been an "open" one, with no continuous barrier, the difference between the tetrarchic scheme of frontier defense and that of the principate is not readily apparent. There was, however, a basic difference, and, as we shall see, it concerned the relationship between the provincial forces and the *limes*. On the Danube, old forts and fortresses were generally rehabilitated and converted into hard-point fortifications, but in the wake of Diocletian's victories over the Sarmatians—now the main enemy on this sector—a chain of bridgehead positions was also established on the far side of the river, in *Ripa Sarmatica*,<sup>145</sup> to facilitate anticipatory attacks. In Egypt, the scene of a major revolt ca. 295 and

a serious attempted usurpation ca. 296, the reorganized fortifications of the Nile valley and delta provided the storehouses for the food and fodder collected by the tetrarchic taxation-in-kind with the protection of *alae* and cohorts.<sup>146</sup>

Egypt retained a special role in the empire, and it had a peculiar geography (there could be no normal perimeter), but it is nevertheless significant that *alae* and cohorts were assigned to the defense of food and fodder; it was absolutely essential that supplies be denied to the enemy and assured to the *mobile* forces of the defense. Ultimately, the entire strategy of defense-in-depth rested on this logistic factor.<sup>147</sup>

The second element in the tetrarchic system of defense-in-depth was the new structure of forces. Aside from the border troops, frontier provinces were defended by legions and by cavalry units styled *vexillationes*, probably of roughly 500 men each.<sup>148</sup> Both were permanently deployed in their assigned sectors, but as in the past, they could also be temporarily redeployed elsewhere in whole or in part, to serve in *ad hoc* field armies.

Diocletian, who subordinated his entire policy to the pressing needs of imperial defense and who turned the entire empire into a regimented logistic base,<sup>149</sup> used much of the wealth extracted by a ruthless taxation-in-kind to rehabilitate and maintain the legionary forces. A century earlier, Septimius Severus had already done much to ease the conditions of service in order to improve recruitment and raise morale.<sup>150</sup> Diocletian followed the same policy and organized his fiscal system in order to supply the legions through payments in kind (though not without also attempting to preserve the much-diminished worth of money salaries).<sup>151</sup>

Of the thirty-four legions deployed until ca. 231,<sup>152</sup> most had survived the struggles of the mid-third century. It is possible that as many as thirty-five new legions might have been added by the time of Diocletian's abdication in 305, for a total of up to sixty-seven or sixty-eight legions. The minimum estimate is fifty-six<sup>153</sup> (thirty-three Severan legions, six more attested legions by 284, fourteen attested legions under Diocletian, and three more that are conjectural<sup>154</sup>). The growth in the legionary forces was thus very great, for the legions of Diocletian were definitely not the diminished 1,000-man battalions of the late empire. Whether the legionary soldier remained a heavy infantryman and combat engineer is unclear, though the great amount of military construction under Diocletian suggests that he did.

The role of the legions was central to Diocletian's defense-in-depth strategy. While the new cavalry *vexillationes* were deployed primarily in the interior, astride important roads, the legions—as

before—remained concentrated in the major defense localities. In front of and next to them there were the *alae* and *cohortes*, by now probably indistinguishable from one another, and neither capable of executing offensive forward-defense tactics. It is, therefore, apparent that the intention was to meet the enemy *inside* the defended zone, with mobile interceptions by the cavalry *vexillationes* and with blocking positions formed by the legions, who were still mobile fighting units.

In Augusta Libanensis, for example, the defenders of the sector fronted by the *Strata Diocletiana* included, in addition to seven *alae* and five *cohortes* along the road itself, two legions and twelve *vexillationes* of cavalry (described as *equites* in the *Notitia*). The frontage held by the static border troops could obviously be penetrated by a mobile enemy, and the *equites* deployed on important routes would therefore have to intercept the intruders in the interior, with the legions (at Palmyra and Danaba) serving as pivots and support points of the system.<sup>155</sup> In Palestine, five *vexillationes* of high-grade cavalry (*equites Illyriciani*) and four of local cavalry (*equites indigenae*) were in similar sector-control positions, obviously constituting a mobile deployment. Here, too, the single legion holds a hinge position, at Aila (near Elat), while seventeen *alae* and *cohortes* in the Arava valley form a chain of static defended points across this major theater of migration and nomadic incursion.<sup>156</sup>

This, then, was the basic defensive scheme under Diocletian, as it can be deduced from the *Notitia*. It is authoritatively accepted<sup>157</sup> that the *alae* and *cohortes*, now immobile, manned a chain of self-contained strongholds; that the *equites* served as mobile forces for ready intervention; and that the legions were still concentrated to form the backbone of the defense and provide its ultimate guarantee. This defense-in-depth on a provincial scale was therefore quite shallow: the fighting was to be confined within the single cells of the frontier sectors and penetrations were to be dealt with by the local forces, since no large (empire-wide) field armies were ordinarily available. By containing the fighting to the narrowest band of frontier territory, the defenders would limit its ravages and the empire would be spared the highly damaging deep incursions entailed by the earlier (and later) strategy of elastic defense.

It was seemingly under Constantine (306–37) that this system gave way to another, in which powerful mobile field forces were concentrated for empire-wide service, and the provincial forces were correspondingly reduced. This Constantinian deployment has been reconstructed from the *Notitia* lists for the lower Danube sectors of Scythia, Dacia Ripensis, and the two Moesias.<sup>158</sup> In Scythia, for example, we find two legions, a Roman and an indigenous river

flotilla, and neither *alae* nor *cohortes*. Legions now provided part of the border guard; they were divided into permanent detachments, each assigned to a specified stretch of the river under a local security officer, the *praefectus ripae*.<sup>159</sup> Close to the food storehouses, centerpiece of all late-Roman strategies, we find seven cavalry units listed as *cunei equitum*, and eight infantry units described as *auxilia*, both new types of combat formations.<sup>160</sup>

The cavalry *vexillationes* were no more, evidently having been transferred to the central field forces (or reorganized into *cunei*), and the legions were no longer deployed as concentrated striking forces. Their status had changed for the worse: in the hierarchy of forces of the mid-third century, the provincial legions were qualified as *ripenses*, holding an intermediate position between the low-status *alae* and *cohortes* and the first-class field forces, the *comitatenses*.<sup>161</sup> The sectoral commander (*dux limitis*) was no longer the commander of the sectoral slice of imperial forces but only a territorial commander.<sup>162</sup>

Since there was no increase in the overall resources of the empire, Constantine's creation of the field armies could only have resulted in a weakening of the provincial forces. There was both an attested qualitative decline (indicated by the relaxed physical standards of recruitment<sup>163</sup>) and most probably a numerical decline as well. Although Constantine did not strip the frontiers of their defenders,<sup>164</sup> it is obvious that the provincial forces had to be diminished if the field armies were to have food, money, and above all, men. There was thus a transition from the shallow defense-in-depth of Diocletian's time to a deeper system based on strong field armies and rather weaker sectoral forces. (In the *Notitia* we find legions designated as *pseudocomitatenses* under the control of field commanders: these units had quite obviously been transferred from the territorial to the mobile forces [*comitatenses*] without, however, attaining the full status of field units.)

The process continued after Constantine. In the *Notitia* lists for Upper Moesia we find, it seems, the depiction of a post-Constantinian state of deployment: three legionary detachments are listed (drawn from IV *Flavia* and VII *Claudia*); but there are also five units of *milites exploratores* (*milites* being a generic term like "unit"), all commanded by prefects. It seems that all eight units are remnants of the old legionary garrison.<sup>165</sup> Having broken all ties with their ancient mother units, the *milites*, like the "legions," are mere surveillance and scouting forces (*exploratores*), presumably acting in support of the eight *cunei* of cavalry and eight *auxilia* of infantry.<sup>166</sup> The *cunei* at least may have retained their cohesiveness (and therefore, their mobility) into the fifth century,<sup>167</sup> while the *auxilia*, for their part,



may have assumed the backstop role of the legionary infantry, though of necessity in a much diminished form.

A still further stage of disintegration is recorded in the *Notitia* lists for the much-ravaged middle Rhine sector, where under the command of the Dux Mogontiacensis<sup>168</sup> we find eleven *praefecti* in charge of units that are mostly undifferentiated *milites*. One unit retains the mere memory of a legionary association (*Praefectus militum secundae Flaviae*); another unit's name recalls a function most probably defunct (*Praefectus militum balistariorum*). In the list it is clear that all are to be identified primarily by the place-names appended to the titulature—a symbol of the final localization of what had once been a purely mobile army.

## VII

### Central Field Armies

If it were possible to create totally mobile military forces—that is, forces with a capacity for instant movement from place to place—then no part would ever have to be deployed forward at all. Instead, the entire force could be kept as a central reserve, without concern for ready availability and without regard for considerations of access or transit. On the other hand, if military forces are entirely immobile, the deployment scheme must make the best of individual unit locations in order to equalize the utility—tactical or political—of each forward deployment; and no forces should be kept in reserve at all, since immobile reserves can serve no purpose.

Not surprisingly, the strategy of imperial security that reached its culmination under Hadrian approximated the second of these two theoretical extremes. Even if their heavy equipment were carried by pack animals or in carts, the legions could not move any faster than a man could walk; in terms of the daily mileage of the Roman infantry, therefore, distances within the empire were immense. Since the frontiers *did* require the continuous presence of Roman forces to deter or defeat attacks, and since the enemies of the empire could not ordinarily coordinate their attacks, the deployment of a central reserve would have been a wasteful form of insurance: long delays would have intervened between the emergence of the threat and the arrival of redeployed forces. Better to keep all forces on the line and augment the defense of one sector by taking forces from another. Forces kept in reserve would serve no purpose and would cost as much as or more to maintain than forces in place and on duty. It is all very well to say that the Antonine deployment pattern was that of a thinly stretched line and to say that there was no mobile reserve

“... prête à voler au secours des points menacés.”<sup>169</sup> At the tactical level, auxiliary units and even legions could generally reach any threatened point of a provincial frontier in a matter of days, but a central reserve could hardly “fly”; it would have to march with agonizing slowness over a thousand miles or more to arrive at, say, the central Rhine sector from a central deployment point like Rome.

There is, nevertheless, one possible reason for the deployment of a centralized reserve even in a very low mobility environment: the protection of the central power itself. What might have been very inefficient from the point of view of the empire could have been very functional indeed for its ruler. Under the principate there was no central field force; there were only palace guards, private bodyguards, officer cadets in retinue, and the like: Augustus had his picked men (*evocati*) and his Batavian slave-guards;<sup>170</sup> later, *speculatores* (select N.C.O.s) also appear in the retinue; and around the time of Domitian we find the *equites singulares*, a mounted force of perhaps 1,000 men.<sup>171</sup> By the later third century the retinue came to include the *protectores*, seemingly a combined elite guard force and officer nursery.<sup>172</sup> By 330 we find the *scholae*, an elite mounted force commanded, significantly, by the emperor rather than by the senior field officers (*magistri militum*), who controlled all the other central forces.<sup>173</sup> In the *Notitia*, five units of *scholae* are listed in the West and seven in the East, probably of 500 men each.<sup>174</sup> Private bodyguards often evolve into palace guards with official status, and there is a similar tendency on the part of elite military in the retinue to degenerate into ornamental palace guards. Another familiar pattern of evolution—palace guard to elite field force to field army—never developed in Rome, in spite of the fact that the Praetorian cohorts were from the beginning a much more substantial force than any bodyguard could be.

Formed in 27 B.C. at the very beginning of the principate,<sup>175</sup> the Praetorians were a privileged force receiving double the legionary salary, or 450 *denarii* per year.<sup>176</sup> In his survey of the imperial forces, Tacitus lists nine Praetorian cohorts, but their number had increased to twelve by A.D. 47;<sup>177</sup> one of the unsuccessful contenders of A.D. 69, Vitellius, further increased the number of cohorts to sixteen, but Vespasian reduced it again to nine. Finally, by 101 their number was increased once more to ten, resulting in a force of 5,000 troops, élite at least in status.<sup>178</sup> In addition to the Praetorian cohorts there were also the Urban cohorts, always four in number and each 500 strong, and the *vigiles*, 3,500 strong by the end of the second century. But the latter were freedmen who served as firemen and policemen, and they cannot be counted as soldiers.<sup>179</sup> Excluding the *vigiles*, there were thus

a maximum of 8,000 men in organized units available as a central force. This was more than adequate to serve as a retinue to the emperor, but it certainly did not amount to a significant field force.

Even though there was a good deal of elasticity in the second-century system, it could not provide field armies for demanding campaigns. Hence, new legions had to be raised for major wars. Domitian raised the I *Minervia* for his war with the Chatti in 83, and Trajan had to raise the II *Traiana* and XXX *Ulpia* for his conquests; Antoninus Pius managed his not inconsiderable wars with expeditionary corps of auxiliary forces, but Marcus Aurelius was forced to form new legions (the II and III *Italicae*) to fight his northern wars.<sup>180</sup> Beginning in 193, Septimius Severus fought a civil war of major proportions; almost immediately afterward he began a major Parthian war. Like his predecessors, he did so with an *ad hoc* field army of legionary *vexillationes* and auxiliaries; but he found, as his predecessors had, that this was not enough: by 196 three new legions, the I, II, and III *Parthicae*, were raised.<sup>181</sup> No emperor since Augustus had raised as many.

Then came the major innovation: although the I and III *Parthicae* were duly posted on the newly conquered Mesopotamian frontier, in line with previous practice, the II *Parthica* was not. Instead, it was installed near Rome at Albanum, becoming the first legion to be regularly stationed anywhere in Italy since the inception of the principate. This, and the fact that all three Severan legions were placed under commanders of the equestrian class (*praefecti*) rather than of the senatorial class (*legati*), has suggested to both ancient and modern historians that the motive of the deployment of II *Parthica* was internal and political rather than external and military.<sup>182</sup> This may have been so; but it is equally evident that the II *Parthica* could also have served as the nucleus of a central field army. The new legion on its own was already a substantial force, more so than the total establishment of pre-Severan Praetorians, Urban cohorts, and *Equites Singulares*. But Severus increased substantially these forces: each Praetorian cohort was doubled in size to 1,000 men, for a total of 10,000; the Urban cohorts were tripled to 1,500 men each, for a total of 6,000; and even the number of *vigiles* was doubled to 7,000. Only the number of the *Equites Singulares* failed to increase.<sup>183</sup> There were, in addition, some troops, especially cavalry, attached to the obscure *Castra Peregrina*, an institution akin to an imperial G.H.Q.<sup>184</sup>

It is unfortunate that no coherent picture of the subsequent employment of these forces can be gleaned from the inadequate sources, but it is certain that out of the 30,000 men now permanently available in Rome and free of frontier-defense duties, a substantial

central reserve could be extracted for actual campaigning, perhaps as many as 23,000 men—the equivalent of almost four legions.<sup>185</sup> This was a significant force: Marcus Aurelius took three legions with him to fight Parthia, and their absence from the frontiers may have triggered the dangerous northern wars of his reign.

It is in the most difficult years of the third century, under Gallienus (253–68), that we hear of a new central reserve, or rather, regional field reserves: these were cavalry forces deployed on major road axes such as Aquileia (controlling the major eastern gateway into Italy), Sirmium for the mid-Danube sector, Poetovio in the Drava valley, and Lychnidus on the major highway into Greece from the north.<sup>186</sup> On the basis of the scattered evidence we have, the outlines of a new strategy emerge: a defense-in-depth so deep that it is virtually an elastic defense in which nothing but the Italian core is securely held.<sup>187</sup>

The major instrument of this strategy was a wholly mobile cavalry corps, which appears to have been constituted by Gallienus, or at least increased by him. Aureolus served for ten years as its commander, fighting loyally against both internal and external enemies before finally turning against Gallienus in 268; the usurpation failed, but Gallienus was assassinated while besieging Milan, where the defeated Aureolus was seeking refuge. Significantly, his designated successor was another cavalry commander, Claudius, who was to rule for two years (268–70), winning great victories. Claudius, in turn, was succeeded by another and much greater cavalry commander, Aurelianus, who ruled until his murder in 275.<sup>188</sup> Clearly, the existence of a mobile corps of cavalry unattached to any fixed position had great political significance: if its commander were not the emperor himself, he could become emperor, since there was no comparable force that could be brought to bear against a large, centralized cavalry corps.

Very little is known of the composition of this cavalry. It included units of *promoti* (which may have been the old 120-horse legionary cavalry contingents<sup>189</sup>), as well as units of native cavalry (*equites Dalmatae* and *equites Mauri*) and possibly some heavy cavalry (*Scutarii*).<sup>190</sup> It is also possible that under Gallienus the legions were given new cavalry contingents of 726 men in place of the original 120.<sup>191</sup> It was at this time that the term *vexillatio* underwent its change of meaning, for it appears in 269 with its original meaning of a legionary infantry detachment, but by 293 it denotes a cavalry unit.<sup>192</sup> The term must have initially connoted a mobile field unit *par excellence*, and it is easy to see the transformation taking place as the importance of the cavalry increases. In the celebrations of the tenth year of Gallienus's



rule the new importance of the cavalry was given formal recognition: in the ritual hierarchy of the procession, it was given the same status as the Praetorian Guard.<sup>193</sup>

The cavalry doubled the strategic mobility of Roman expeditionary forces moving overland (ca. fifty miles per day against ca. twenty-five), but this strategic advantage entailed a tactical disadvantage: when the Roman soldier became a cavalryman he could retain no trace of his former tactical superiority. Roman cavalry fought the barbarians without the inherent advantage enjoyed by even a decadent legionary. Perhaps it is for this reason that the sources of the nostalgic Vegetius were hostile to the cavalry, arguing that the infantry was cheaper, more versatile, and more appropriate as a vehicle of legionary traditions.<sup>194</sup>

The history of the Roman cavalry records the consistent success of large bodies of light cavalry armed with missile weapons and the equally consistent failure of the heavy cavalry equipped with shock weapons.<sup>195</sup> Nevertheless, under Trajan a milliary unit of heavy lancers (*Ala I Ulpia Contariorum Miliaria*) had already appeared; and even earlier, Josephus had described a weapon of Vespasian's cavalry in Judea (ca. 68) as a *kontos*, i.e., a heavy lance, the characteristic weapon of the heavy cavalry.<sup>196</sup> This cavalry had no body armor; however, the first unit of armored cavalry appears in Hadrian's time, with an *Ala I Gallorum et Pannoniorum Catafractata*, a designation that describes mailed cavalry with little rigid armor.<sup>197</sup> The heavy cavalry had been the leading force of the Parthians, and it was also the leading force of the Sassanid armies. But their heavy cavalry was fully protected with rigid armor, and the horses were partly armored as well, in the familiar manner of late-medieval knights. Roman troops nicknamed them *clibanarii* (bread-ovens), and they certainly could not have had an easy time of it in the heat of the Syrian desert.<sup>198</sup>

Late in 271, Aurelian sailed east to destroy the power of Palmyra with a force of legionary detachments, Praetorian cohorts, and above all, light cavalry of Moorish and Dalmatian origin.<sup>199</sup> First by the Orontes River and then at Emesa,<sup>200</sup> Aurelian soundly defeated the Palmyrans, using the same tactic on both occasions: the light and unencumbered native horse retreated and the enemy *clibanarii* pursued—until they were exhausted. Then the real fighting began. Later, when Persian forces intervened to take the Romans besieging Palmyra in the flank, they were defeated in turn with the same tactics. In spite of this ample demonstration of the superiority of light cavalry over armored horsemen if supported by steady infantry, units of *clibanarii* began to appear in the Roman army: nine are listed in the

*Notitia Dignitatum*, including a unit described as *equites sagittarii clibanarii* (i.e., armored mounted archers)—most likely a decorative but ineffectual combination of light weaponry and heavy armor.<sup>201</sup> The combat record of this armored cavalry was dismal.<sup>202</sup>

There was no room for an unattached cavalry corps in Diocletian's scheme of shallow defense-in-depth. Strategically, it had been the natural instrument of an "elastic defense," while on the political level its very existence was destabilizing. But Diocletian did not need to dissolve the cavalry corps, for it had probably already disappeared.<sup>203</sup> It remains uncertain whether the Moorish and Dalmatian *equites* were disbanded by Aurelian after his victory over Palmyra in order to garrison the disorganized eastern frontiers—or whether Diocletian himself disbanded them.<sup>204</sup> The *promoti* may have been attached to the legions once again, though the link may have been only administrative.<sup>205</sup>

The question of the deployment of the cavalry under Diocletian is directly connected with a broader, more important, and much more controversial issue—the deployment of a field army as such. The orthodox view has been that Diocletian and his colleagues created or expanded the *sacer comitatus* (i.e., the field escort of the emperors), replacing the improvised field forces of their predecessors with standing field armies and creating the dual structure of static border troops (*limitanei*) and field forces (*comitatenses*) that characterized the army of the late empire. According to this approach, Constantine merely perfected the change by adding a command structure a generation later.<sup>206</sup> The *sacer comitatus* would thus have amounted to a field army and would have been much more than a bodyguard, since (1) it was of substantial size, and (2) it was not uniform in composition, as the old Praetorian cohorts had been. It included the latter, whose number was, however, reduced;<sup>207</sup> *lanciararii*, elite infantry selected from the legions;<sup>208</sup> cavalry units, called *comites*; the prestigious Moorish cavalry; select new legions (*Ioviani* and *Herculiani*); and possibly cavalry *promoti*.<sup>209</sup>

In the other, less traditional view, which was advanced earlier in the century and then rejected,<sup>210</sup> the argument was that the *sacer comitatus* was nothing more than the traditional escort of the emperors and not a field army or even the nucleus of one. It was held that Diocletian had expanded the army, doubling it in size, but it was Constantine who had removed large numbers of troops from the frontier sectors to form his central field force of *comitatenses*. Recently restated in a monographic study of considerable authority,<sup>211</sup> which has been criticized<sup>212</sup> but also authoritatively accepted, at least in great part,<sup>213</sup> this view now seems persuasive. The controversy over

the authorship of the reform is still unresolved, for doubts on subordinate but important questions remain.<sup>214</sup> There is no doubt, however, that it was Constantine who created the new commands of the standing field army, the *magister peditum* of the infantry and the *magister equitum* of the cavalry.<sup>215</sup>

In any event, by the first decades of the fourth century the dual army structure was in existence, with *limitanei* and provincial troops on the border under the control of sector commanders (*duces*), and with centralized field forces under the emperor and his *magistri*. The subsequent evolution of the dual army structure was predictable. In the *Notitia*, there are forty-eight legions listed as *pseudocomitatenses*, indicating that they were transferred into the field army after having served as provincial forces.<sup>216</sup> When Constantine formed, or at least enlarged, his field army, he did raise some new units, including the *auxilia*,<sup>217</sup> but he must also have considerably weakened the provincial forces in order to augment his field forces. This was no doubt the transfer of troops from the frontiers to the cities that the fifth century historian, Zosimus, however prejudiced by his anti-Christian sentiments, rightly criticized.<sup>218</sup> It is probable that during the late fourth century the *comitatenses* grew steadily in size at the expense of the provincial forces (now all called *limitanei*), whose relative status and privileges continued to decline.<sup>219</sup>

## VIII

### Conclusion

It is apparent that reductions made in the provincial forces that guarded the frontiers in order to strengthen the central field armies would always serve to provide political security for the imperial power, but they must inevitably have downgraded the day-to-day security of the common people. In the very late stages of imperial devolution in the West, it is not unusual to find the frontiers stripped wholesale of their remaining garrisons to augment central field forces, as happened in 406 under Stilicho, who was engaging in internal warfare.<sup>220</sup> In such cases, the frontier was seemingly left to be "defended" by barbarian alliances,<sup>221</sup> which were hollow versions of the client relationships of the first century. Such alliances were rented, not bought; inducements could provide no security once the indispensable element of deterrence was gone.

The lists of the *Notitia Dignitatum*, whatever their exact date, give some notion of the distribution of forces between the frontier sectors and the field armies, and several attempts have been made to quantify the distribution on the basis of varying estimates of unit sizes.<sup>222</sup> (See Table 3.1.)

Table 3.1

Distribution of Troops: Frontiers and Field Armies in the East and West

	Number of Troops				
	(1)	(2)	(3)	(4)	(5)
Western <i>comitatus</i>	—	111,000	113,000	123,800	94,000
Eastern <i>comitatus</i>	—	94,500	104,000	96,300	79,000
Total <i>comitatenses</i>	194,500	205,500	217,000	220,100	173,000
Western <i>limitanei</i>	—	200,000	135,000	138,000	122,000/130,000
Eastern <i>limitanei</i>	—	332,000	248,000	165,700	201,500
Total <i>limitanei</i>	360,000	532,000	383,000	303,700	323,500/331,500
Total Western	—	311,000	248,000	261,800	226,000/224,000
Total Eastern	—	426,500	352,000	262,000	280,500
Percentage of <i>limitanei</i> in West	—	64%	54%	47%	56-58%
Percentage of <i>limitanei</i> in East	—	78%	70%	63%	72%
Total troops, East and West	554,500	737,500	600,000	523,800	496,500/504,500
Percentage of <i>limitanei</i> in total	65%	72%	64%	58%	65%—

Source: (1) T. Mommsen, "Das römische Militärwesen seit Diocletian," *Hermes* 24 (1889): 263 cited in Clemente, *La Notitia Dignitatum*, p. 156, n. 71; (2) Nischer, "Army Reforms of Diocletian and Constantine," p. 54; (3) Jones, *Later Roman Empire*, vol. 3, table 15, pp. 379-80; (4) Várady, "New Evidence on Some Problems of Late Roman Military Organization," p. 360; (5) J. Szilágyi, "Les Variations des centres de prépondérance militaire dans les provinces frontières de l'empire romain," *Acta Antiqua Academiae Scientiarum Hungaricae* 2(1953): 217.

These estimates, so widely different in authority and reasoning (they reflect, *inter alia*, different datings of the *Notitia*) have one thing in common: in each case the percentage of *limitanei* is a substantially higher figure for the East, which survived the fifth century crisis, than for the West, which did not. The implication is obvious, and so is its relationship to the argument made here as to the strategic worth of reserve forces in a very low mobility environment. The fact that the enemies of the empire could not have been significantly more mobile is irrelevant. Since the external threat was uncoordinated, *relative* mobility was unimportant. What mattered was the *absolute* mobility of Roman forces deployed in the rear, which was much too low to justify the dual system on military grounds.

Septimius Severus commanded his armies against both internal and external enemies in both East and West once he became emperor, even though he had no experience of active duty until he came to power. Again the implication is clear: "The example of Severus became a rule to which there could be no exceptions. The emperor must command his armies in the field, whatever his age or his personal inclinations—and if he was unsuccessful, a better general would be put in his place."<sup>223</sup> The field armies of the later empire were much larger than those of the principate, but even when distributed in regional reserves the *comitatenses* could not hope to have adequate strategic mobility to defend imperial territory preclusively: the enemy could be intercepted and often defeated, but only after he had done his worst. On the other hand, the centralized field armies could serve to protect the power of the soldier-emperors who controlled them, and this was the one task that the field armies continued to perform effectively until the very end.

But the damage inflicted upon imperial territories, private lives, and private property was cumulative; it relentlessly eroded the logistic base of the empire and relentlessly diminished the worth of the imperial structure to its subjects.

## EPILOGUE. *The Three Systems: An Evaluation.*

From the Constantinian version of defense-in-depth, with its dual structure of border troops and central field units, the stratification of the imperial army predictably evolved further. By the later fourth century,<sup>1</sup> we find new units, styled *palatini*, serving as the central field forces, under the direct command of the emperors of East and West; the *comitatenses* have become lower-status *regional* field armies, while the *limitanei* have sunk still lower in relative status. It may safely be assumed that this evolution caused a further reduction in the quality and quantity of the human and material resources available for territorial defense, both local and regional. Other things being equal, it must have entailed a further decline in territorial security, with all its logistic and societal consequences, manifest in the increasing weakness of the empire.

A triple deployment in depth would of course be much more resilient than any linear deployment, but this "resilience" could merely mean that the central power could thereby survive for another season of tax gathering from a population now constantly exposed to the violence of endemic warfare and the ravages of unopposed barbarian incursions. Finally, the situation could so deteriorate that in the fifth century an ordinary citizen of the empire, a merchant from Viminacium, could prefer life outside the empire,

finding a desirable new home among a people no gentler than the Huns, in the very camp of Attila.<sup>2</sup>

Let us then reconsider the three systems of imperial security. First was the system described here as Julio-Claudian, but more properly perhaps to be thought of as the system of the republican empire. Around its core areas the empire was hegemonic in nature, with client states autonomously responsible for implementing Roman *desiderata* and providing out of their own resources, and through their obedience, for the territorial security of the core areas. No Roman troops are ordinarily deployed in the client states or with client tribes, but the stability of the system requires a constant diplomatic effort both to ensure that each client will be continually aware of the totality of Roman power (while being itself politically isolated) and to maintain the internal (e.g., dynastic) and regional (i.e., inter-client) equilibrium of the client structure. Client states great and small are thus kept in subjection by their own perceptions of Roman power, and this deterrent force was complemented by positive inducements, notably subsidies.

Under this system, the armed forces that the clients perceive as an undivided force of overwhelming strength are actually distributed in a vast circle around Rome. But these troops are still concentrated in multi-legion armies and are not committed to territorial defense, so they are inherently mobile and freely redeployable. The flexibility of the force structure is such that almost half the army can be sent to a single rebellious province (Illyricum in A.D. 6-9), without prejudicing the security of the rest of the empire. In the absence of such rebellions, this flexibility results in vast "disposable" military strength, which can be used for further expansion where the front remains "open," as in Germany before A.D. 9 or Britain under Claudius.

Owing to its hegemonic nature, the sphere of imperial control is limited only by the range at which others perceive Roman power as compelling obedience. The reach of Roman power and the costs of its military forces need not, therefore, be proportional. Further extensions of the empire, in a hegemonic mode, do not require increases in the military forces maintained. New clients added to the empire will respond to the same compulsion as have all the clients brought within the sphere of imperial control before them. Hence the economy of force of the Julio-Claudian system, and its efficiency. But this was a system whose goal was to enhance the security of Roman control rather than the security of the imperial territory and its populations.

The Antonine system, in use in one form or another from the Flavian era after A.D. 69 to the crisis of the mid-third century,

reflects the territorialization of the empire and the reorientation of its priorities. Armed forces are now everywhere deployed to secure the tranquillity and, therefore, the prosperity of border lands and, *a fortiori*, of the interior. The military strength of the empire and its effective power are now rigidly proportional, since this strength is now largely used directly, not as a tool of political suasion. Clients remain, but they are much less useful than in the past: the task of maintaining territorial security is efficiently shifted from weak clients to widely distributed frontier forces, while strong clients can no longer be tolerated, since their strength may now dangerously exceed that of the adjacent imperial forces.

Nevertheless, the empire remains strong, and not the least of its strength is political. A real growing prosperity and a voluntary Romanization are eliminating the last vestiges of nativistic disaffection and creating a strong base of support for the unitary regime. Facing enemies widely separated from one another at the periphery, the empire can still send overwhelmingly powerful forces against them, since the tranquillity of the provinces—and, in places, elaborate border-defense infrastructures—allow peace to be temporarily maintained even with much-depleted frontier forces. This residual offensive capability is primarily useful as a diplomatic instrument, its latent threat serving to keep the neighbors of the empire divided—if not necessarily obedient.

Nevertheless, the cultural and economic influence of Rome on the lives of all the neighbors of the empire is itself creating a cultural and political basis for common action against it. Men who had nothing in common now acquire elements of a culture shared by all but belonging to none. Beyond the Rhine, the federation of border peoples that will turn them into formidable multi-tribal agglomerations is beginning. Opposed by the relentless force of cultural transformation, Roman diplomacy becomes less effective in keeping the enemies of the empire divided. And the system of perimeter defense, keyed to *low-intensity* threats, cannot adequately contend with their unity.

The third system arose in response to this intractable combination of diplomatic and military problems whose consequences became manifest in the great crisis of the third century. Under Diocletian, a shallow and structured defense-in-depth replaces the "elastic defense" of Gallienus and the previous generation, in which *ad hoc* field armies had fought agglomerations of barbarians deep within imperial territory.

Like the Antonine, the new system provides no disposable surplus of military power either for offensive use or for diplomatic coercion, deterrent, or compellent. The difference is that the third system no longer has a "surge" capability either, since the enemies of the empire

are no longer kept on the defensive by forward defense tactics; instead, they are only contained. When the containment forces are reduced to muster *ad hoc* field forces, penetrations occur, and the Antonine remnants of a capacity to generate the image of power for the purposes of political suasion is irrevocably lost. It follows that diplomatic relationships with external powers must now reflect the local balance of forces—which cannot always favor the empire on every sector of the perimeter.

With this, the output and input of the system are finally equated. The level of security provided becomes directly proportional to the amount of the resources expended on the army and on frontier fortifications. The great economy of force that made the unitary empire a most efficient provider of security is lost. From now on it merely enjoys certain modest economies of scale over the alternative of independent regional states. And these economies of scale are not large enough to compensate for much administrative inefficiency or venality. In the end, the idea and the reality of the unitary empire is sustained no longer by the logic of collective security, but only by the will of those who control the imperial power, and by men's fear of the unknown.

## APPENDIX. *Power and Force: Definitions and Implications.*

Military power is normally defined, in functional terms, more or less as "... the ability of states to affect the will and behavior of other states by armed coercion or the threat of armed coercion."<sup>1</sup> Such a definition clearly does not allow for any meaningful differentiation between power and force; indeed the quoted author immediately adds, "It [military power] is equivalent to 'force,' broadly defined."<sup>2</sup> It is apparent that the "power" manifest in the Roman security systems under consideration, as indeed in almost all other conceivable security systems, is a phenomenon much broader than force, even if force is "broadly defined."

Power itself, power *tout court* (but always as a relation rather than a unit of measurement), has been the subject of countless definitions,<sup>3</sup> including some so general as to define very little indeed (e.g., "man's control over the minds and actions of other men," in a popular textbook<sup>4</sup>). One modern definition analyzes the power relation in its components, treating power-in-action as a dynamic, manipulative relationship, of which power *tout court* is an instrumentality that includes diverse elements in a continuum from positive incentives to coercion.<sup>5</sup> In this fuller definition, voluntary compliance is attributed to "authority," while the absence of coercion or the threat thereof in *non-voluntary* compliance is said to reveal the working of "influence."<sup>6</sup>

Other modern definitions deliberately combine the notions of power and influence, treating both as actor-directed relationships,<sup>7</sup> whose nature can be

viewed in terms of "intuitive notions very similar to those on which the idea of force rests in mechanics"<sup>8</sup>—Newtonian mechanics, that is. Not surprisingly, less formal definitions obscure entirely any distinction between power and force,<sup>9</sup> beginning (and sometimes ending) with some such phrase as "power is the ability to force. . . ."

Now these definitions may be adequate for a variety of analytical purposes, but not for our own. In seeking to evaluate the efficiency of the three systems of imperial security, we note first of all that in these, as in all comparable systems of security both ancient and modern, "power" as an aggregate of external action capabilities denotes the overall "output" of the system. (The output is power rather than security because the latter depends also on the level of the threat, a variable external to the system.)

Next, we observe that the efficiency of such systems is defined by the relationship between the power generated (output) and the costs to society<sup>10</sup> of operating the system (input). These costs are both the direct costs of force-deployments, of military infrastructures, and of subsidization, and the hidden costs that may be imputed to methods of *discretionary* defense (i.e., defense-in-depth and "elastic" defense), in which damage is inflicted on the society by enemy action that goes temporarily unopposed for strategic (i.e., systemic) reasons.

All else being equal, the efficiency of such systems must be inversely proportional to the degree of reliance on force, since the force generated will require a proportional input of human and material resources. In fact, the efficiency of the systems will reflect their "economy of force."

It follows that while in a static perspective, force is indeed a constituent of power, in *dynamic* terms force and power are not analogous at all, but they are rather, in a sense, opposites. One is an input and the other an output, and efficiency requires the minimization of the former and the maximization of the latter. Evidently we cannot rely on definitions that nullify the difference (in dynamic terms) between force and power, and must provide our own definitions instead.

Of course, the definition of force is by far the simpler. We know how force is constituted: in direct proportion to the quantity and quality of the inputs, whether these are legionary troops or armored divisions, auxiliary cavalry or helicopter squadrons or, at a different level of analysis, men and foodstuffs or equipment and fuels. We know how force "works": by direct application on the field of battle, or in active (non-combat) deployments. It is true that force also works indirectly (i.e., politically) since its mere presence—if recognized—may deter or compel. But the indirect suasion<sup>11</sup> of force, though undoubtedly a political rather than a physical phenomenon, occurs only in the narrowest "tactical" dimension.

Accordingly, while bearing in mind this qualification, we may treat force-in-operation as essentially analogous to a physical phenomenon, genuinely comparable to the concept of force in Newtonian mechanics. Both are consumed in application; both wane over distance to a degree that is dependent on the means of conveyance or the medium of transmission; both are characterized by perfect proportionality between qualitatively equal units. In other words, military force is indeed governed by constraints on

accumulation, use, transmission, and dispersion akin to the physical laws that condition mechanical force.

How does power "work"? Very differently. First, it works not by causing effects directly, but by eliciting responses—if all goes well, the *desired* responses. The powerful issue an order, and those subject to their power obey. But in obeying, the latter are not the passive objects of the power relation (as are the objects of force). They are the *actors*, since those who obey carry out the required action themselves.

The powerful, who merely issue the order, only have a static attribute, i.e., "power"; it is the actor-objects of this power who supply the dynamic "energy" through their obedience.<sup>12</sup> It follows immediately that the physical constraints which impose a proportional relationship between the amount of force applied (and consumed in the process) and the results obtained does *not* apply to the power relation. One, two, or a thousand prisoners of war who walk to their place of internment in response to an order that they choose to obey do not *consume* the power to which their obedience is a response; in contrast, the physical removal of fifty demonstrators requires much less force than the removal of fifty thousand. In the latter case there is a rigid proportionality between the force-inputs and the output; in the former there is no such proportionality.

All this merely describes the power-relation without explaining it. Next we must ask why some men obey others, or, in other words, what the processes are whereby desired responses can be elicited in the minds of men, causing them to act in the manner required of them. Clearly, the actor objects of the power relation *decide* to obey; if we assume that they are rational,<sup>13</sup> their obedience or lack of it must reflect a comparison between the costs and benefits of obedience versus those of defiance. (This comparison may have been internalized into a mental habit, with obedience reflexive rather than deliberate. Such apparently instinctual processes merely reflect the ingrained results of *prior* comparisons of costs and benefits.)

At this point it would seem that power is easily defined as the ability to control the flows of costs and benefits to others, with force being merely a subordinate ability to impose a particular kind of cost through coercion or destruction. If this were indeed so, then our analysis would have fruitlessly returned to its starting point,<sup>14</sup> and the differentiation here being pursued between power and force would have to be abandoned. For it would appear that the "ability to control costs and benefits" must be subject to the same limiting proportionality between inputs and outputs as the ability to apply force, or force *tout court*.

But this is not so. The ability to elicit desired responses through the decisions of the actor/objects of the power relation is plainly *not* a function of the ability to control costs and benefits, but rather of the *perceived* ability to do so. In other words, the first stage of the power process is perceptual, and power is therefore initially a subjective phenomenon; it can only function through the medium of others' perceptions.

If power is in the first instance a perceptual process, then distance will not diminish it unless the means of perception are correspondingly degraded over the distance. A remote eastern client kingdom would normally be much

closer to Roman realities in perceptual terms than would be the peoples beyond the Elbe, for in the East a Hellenistic civilization predisposed men to understand the meaning of imperial power, while no such cultural basis was to be found beyond the Elbe. It is true that repeated punitive actions (as well as positive inducements) could teach even the most primitive of men the meaning of Roman power, but in that case the "power" so validated would itself be a different sort of phenomenon: crucially, there *would be* a proportionality between inputs and outputs, at least as long as the process of education continued.

Perceived power does not diminish with distance, for it is not a physical (or quasi-physical) phenomenon. For the same reason, perceived power is not consumed by use. One client king or ten can perceive the same undivided power in the empire and can be influenced by it. Nor is the quantum of this power diminished when the obedience of a further dozen client kings is secured—by their own perception of this same power. Indeed, perception is one of the very few human activities (*pace* the romantics, love is another) that does not consume its objects, even imperceptibly. By contrast, force applied on one sector to impose tranquillity on one restless tribe is unavailable for simultaneous use against another, and any increase in the number of targets diminishes the amount of force that can be used against each. It is for this reason that the efficiency of systems of imperial security must depend on their economy of force. Or, to put it differently, their efficiency depends on the degree to which force is maintained as an inactive component of perceived power rather than used directly.

If one excludes for the moment consideration of all other components of power, that is, "static," perceived power, it may seem that once again the difference between the workings of power and those of force is inconsequential. For it is clear that in virtually all conceivable circumstances deployed military force will be the central ingredient of the overall power of states. Accordingly, it would appear that it hardly matters whether security is obtained by the static deployment of force-as-perceived power or by its direct use. Not so. Even if one does not take into account the actual wear and tear that force must suffer when actually used (casualties and matériel losses), force-as-power is inherently much more economical than force used directly, since it does not require proportionate inputs of force.

For example, a given perimeter may be secured by means of an active defense (in which case the forces deployed must suffice to defeat *all* threats on *every* segment of the perimeter) or else it may be secured by deterrence, for which one need only deploy a punitive striking force capable of inflicting greater damage on the values of potential attackers than the gains the latter may hope to make by attacking in the first place. Inevitably, an active defense requires altogether greater forces than does deterrence, for which credible retaliatory capabilities will suffice—assuming that one's opponents are rational *and* make predictable relative-value judgments.<sup>15</sup> In the first instance, security requires the protection of every single asset vulnerable to attack; in the second, it requires merely the *recognized* ability to destroy selected enemy assets and inflict unacceptable levels of damage. On the other

hand, it must be pointed out that there is a qualitative difference between the security provided by deterrence and that provided by an active defense. The former, being the result of suasion, is subject to all the vagaries inherent in human perception and human decision; the latter, being physical, is definitive. Prudent men may well choose to pay the greater costs of an active defense for the sake of its reliability, which is independent of the decisions of other men.

This raises the entire broad question of error, beyond the specific case of cognitive time-lags. If power can only be manifest through the medium of others' perceptions, then the translation of the "objective" (and, by the same token, theoretical) ability to control costs and benefits into the perceived ability of doing so is subject to multiple errors: errors of physical perception, of the medium of communication, of cognitive processes, and also of communication between perceivers. A blind man will not be intimidated by the display of a gun, nor a bank clerk by a gun too well concealed, while cannibals ignorant of the chemistry of gunpowder may regard rifles as ineffectual clubs, or may at least fail to convey word of their lethality to other men who have never seen them. In such cases, it may suffice to kill one savage, blind man, or bank clerk to educate the rest, but the exercise of suasion will have been invalidated, since force had to be used instead. Nor will symbolic force suffice in every case.

Is power then merely a perceptual phenomenon, and politics nothing more than a particular psychological phenomenon—and a narrow one at that? Surely not. So far, we have implicitly treated the power relation as bilateral, with a single controller of costs and benefits facing—and being perceived by—a single actor/object of his power; even when groups were hypothesized, they were in fact treated as entirely monolithic, thus identical to individuals. But even if all politics could be treated as a sum of power relations, these relations would be for the most part not bilateral, but multi-lateral.

Returning to our example of the client kings who individually perceive Roman power and individually obey imperial commands, we note the implicit assumption that the client-kings do *not* also perceive the power of their fellow clients as being potentially additive and compare the sum total to the power of Rome. Had such a comparison been made, then the power of the empire would no longer have been seen as so totally superior.

It follows that the power relation between the empire and the single client king was only procedurally bilateral. In fact it depended on a variety of phenomena, most of them multi-lateral: the client's perception and calculation of his own power, of the power of other clients, of the possibilities of concerted action, of the risks, costs, and benefits of a joint defiance (versus the costs and benefits of obedience), and so on.

All these factors are conditioned by the perceptions of individuals and the decisions of (and between) groups—in other words, by all the processes of politics in their full diversity and inherent complexity. Politics in the round ultimately determines the relationship between client states and empires; most significantly, it determines the balance of power, which is a function



not only of the perceived power of the individual units in the system but also of the degree of cohesion between the clients and within the empire. In spite of the importance of these complex relations, perception and the problems thereof remain central, and with it remains our distinction between power and force.

## NOTES

### Abbreviations Used in Notes

- ANRW *Aufstieg und Niedergang der Römischen Welt: Geschichte und Kultur Roms in Spiegel der neueren Forschung*. Hildegard Temporini, ed. Berlin and New York: Walter de Gruyter, 1974–.
- BC *Bellum Gallicum*
- CAH *Cambridge Ancient History*. Cambridge: At the University Press, 1923–39.
- CW *Transactions of the Cumberland and Westmoreland Antiquarian Society*
- DE *Dizionario epigrafico di antichità Romane*. Ettore di Ruggiero, ed. Rome: L. Pasqualucci, 1895.
- JRS *Journal of Roman Studies*
- NH *Naturalis Historia* of Pliny the Elder
- REL *Revue des Etudes Latines*
- SHA *Scriptores Historia Augustae*

### CHAPTER ONE

1. Ronald Syme, "Some Notes on the Legions under Augustus," *JRS* 23 (1933): 14–33. See also H. M. D. Parker, *The Roman Legions* (Oxford: At the Clarendon Press, 1928), pp. 72–92. The major reference remains Ritterling's article, "Legio," in the Pauly-Wissowa *Real-Encyclopädie der klassischen Altertumswissenschaft*.

2. For a brief summary of the evidence, see A. Passerini in *DE*, 4, fasc. 18, pp. 555–57, s.v. "Legio."

3. It is normally assumed that the legions of the principate had an establishment of 5,280 foot soldiers (nine standard cohorts of six centuries, with eighty men in each, and a first cohort with six double centuries, i.e., 960 men) as well as 120 mounted troops. (*Ibid.*, p. 556.) A revised reading of *De Munitionibus Castrorum*, the prime source, yields a total of 5,120 combat foot soldiers in nine standard cohorts and one first cohort consisting of five rather than six double centuries; see R. W. Davies, "Appendix," *Epigraphische Studien*, no. 4 (1957): 110–11. On headquarters' troops, see David

Breeze, "The Organization of the Legion: The First Cohort and the *Equites Legionis*," *JRS* 59 (1969): 50-55.

4. The basic work remains G. L. Cheesman, *The Auxilia of the Roman Imperial Army* (Oxford: At the Clarendon Press, 1914). A modern work by Professor J. F. Gilliam is eagerly awaited. See the recent survey by D. B. Saddington, "The Development of the Roman Auxiliary Forces from Augustus to Trajan," in *ANRW*, pt. 2, vol. 3, pp. 176-201.

5. *Annals*, IV, 5.

6. E.g., G. H. Stevenson in *CAH*, 10: 229; and Cheesman, *Auxilia*, p. 53.

7. Cf. J. Szilágyi, "Les Variations des centres de prépondérance militaire dans les provinces frontalières de l'empire romain," *Acta Antiqua Academiae Scientiarum Hungaricae* 2 (1953): 133, 147, 156. Szilágyi's sector analysis yields a total estimated force level of 325-356,000 men for A.D. 6. This decreases to 318-348,000 men in A.D. 20 and increases to 369-375,000 men in A.D. 46.

8. *Res Gestae*, 3.

9. *N.H.*, VII.149. See P. A. Brunt, *Italian Manpower 225 B.C.-A.D. 14* (Oxford: At the Clarendon Press, 1971). According to Brunt, after the wars and colonization of Julius Caesar, the adult male citizen population in Italy amounted to roughly 1,200,000 men, of whom 900,000 would have been *iuniores*, i.e., the primary group of citizens of military age (p. 512). It is not surprising, therefore, that conscription was very unpopular (pp. 414-15); it was, in fact, abolished by Tiberius. As early as the first half of the first century A.D., one third of the legionary manpower may have been of provincial birth (though this would not exclude Roman origins and/or citizenship); see G. Forni, *Il Reclutamento delle legioni da Augusto à Diocleziano* (Milan-Rome: Fratelli Bocca, 1953), pp. 65-76, and Appendix B, pp. 159-68. Such conclusions are subject to the uncertainties inherent in very small samples; see, more recently, Forni, "Estrazione etnica e sociale dei soldati delle legioni nei primi tre secoli dell'impero," *ANRW*, pt. 2, vol. 1, p. 344.

10. See G. R. Watson, *The Roman Soldier* (London: Thames and Hudson, 1969), p. 92, for legionary pay and upkeep; on retirement grants (which could also be given in land), see *ibid.*, pp. 147-53; on donatives, see *ibid.*, pp. 108-14. For the pay of the *auxilia*, see Watson, "The Pay of the Roman Army: The Auxiliary Forces," *Historia* 8 (1959): 372-78.

11. Th. Pekáry, "Studien zur römischen Währungs und Finanzgeschichte von 161 bis 235 n. Chr.," *Historia* 8 (1959): 472-73.

12. *DE*, vol. 4, fasc. 18, p. 555, s.v. "Legio."

13. *IV.5*.

14. E.g., G. H. Stevenson in *CAH*, 10: 229; Parker, *Roman Legions*, p. 119, et multi alii.

15. E.g., H.-G. Pflaum, "Forces et faiblesses de l'armée romaine du Haut-Empire" in *Problèmes de la guerre à Rome*, ed. Jean-Paul Brisson (Paris and La Haye: Mouton & Co., 1969), p. 94. See also, retrospectively, D. van Berchem, *L'Armée de Dioclétien et la réforme Constantinienne*, Institut français d'archéologie de Beyrouth, Bibliothèque archéologique et historique 56 (Paris: Librairie orientale Paul Geuthner, 1952), pp. 103-4, whose argument, addressed at the army of the late Principate, applies *a fortiori* to the Julio-Claudian period.

16. G. H. Stevenson, *Roman Provincial Administration till the Age of the Antonines* (Oxford: Basil Blackwell, 1939), p. 102; F. E. Adcock in *CAH* 10: 598-99.

17. *Tiberius*, 16.

18. C. M. Wells, *The German Policy of Augustus: An Examination of the Archaeological Evidence* (Oxford: At the Clarendon Press, 1972). Wells's conclusions are summarized on pp. 237-46.

19. Tacitus (*Historiae*, IV.23) makes this clear in describing the site of Vetera (Xanten), the camp in which part of one legion and the remnants of another came under attack during the revolt of Civilis (A.D. 69-70).

20. S. L. Dyson, "Native Revolts in the Roman Empire," *Historia* 20 (1971): 239-74, esp. pp. 264-67.

21. The characterization is that of G. Webster, *The Roman Imperial Army of the First and Second Century A.D.* (London: Adam & Charles Black, 1969), p. 52.

22. Wells, *German Policy*, p. 239. See also R. Chevallier, "Rome et la Germanie au Ier siècle de notre ère: Problèmes de colonisation," *Latomus* 20 (1961), p. 269.

23. See G. W. Bowersock, *Augustus and the Greek World* (Oxford: At the Clarendon Press, 1965), p. 66.

24. For the various meanings of *limes*, see G. Forni in *DE*, vol. 4, fasc. 34, s.v. "Limes," pp. 1076-83. For the meaning relevant to this period, see his heading "g" (p. 1080). For the transformation in the meaning of *limes*, see Henry F. Pelham, *Essays*, ed. F. Haverfield (Oxford: At the Clarendon Press, 1911), p. 168, and the discussion by A. Piganiol, "La notion de *limes*" in *Quintus Congressus Internationalis Limitis Romani Studiosorum* (Acta et Dissertationes Archaeologicae), *Arheološki Radovi i Rasprave*, III (Zagreb, 1963), pp. 119-22.

25. Legally, the constituted client states came under the *jus postliminii*, even though for most purposes they were treated as *de facto* extensions of imperial territory. See P. C. Sands, *The Client Princes of the Roman Empire under the Republic*, Cambridge Historical Essays no. 16 (Cambridge: At the University Press, 1908), p. 115.

26. Pliny, *N.H.*, V.81 f. Cited by M. P. Charlesworth in *CAH* 11: 616 n.

27. The phrase is Ernst Kornemann's, from the title of his lecture "Die unsichtbaren Grenzen des römischen Kaiserreichs," reprinted in *Staaten-Völker-Männer Aus der Geschichte des Altertums* (Leipzig: Dieterich, 1934), pp. 96-116.

28. For the motives of Tiberius's recall of Germanicus, see Tacitus, *Annals*, II.26; for the effect of relations between the Cherusci-based confederation of Arminius and the Marcomannic state of Maroboduus, see *ibid.*, II.44. On the causes of the recall, see also Louis Harmand, *L'Occident romain: Gaule, Espagne, Bretagne, Afrique du Nord* (31 av. J.C. à 235 ap. J.C.) (Paris: Payot, 1960), pp. 106-8. See also Josef Dobiáš, "King Maroboduus as a Politician," *Klio* 38 (1960): 163.

29. On the Tiberian clients in general, see Ronald Syme in *CAH* 10: 781-83; Emilienne Demougeot, *La Formation de l'Europe et les invasions barbares: Des origines germaniques à l'avènement de Dioclétien* (Paris: Aubier, 1969), pp. 114-23. For Roman diplomacy with the Germanic peoples in general, see E. A. Thompson, *The Early Germans* (Oxford: Clarendon Press, 1965), pp. 72-108. On Maroboduus, see Dobiáš, "King Maroboduus," pp. 160-61. On the Sarmatian Iazyges, see John Harmatta, "The Sarmatians in Hungary," in *Studies in the History of the Sarmatians*, Magyar-Görök Tanulmányok, 30 (Budapest: Pázmány Péter Tudományegyetemi Görög Filológiai Intézet, 1950), pp. 45-46.

30. C. E. Stevens, "Britain between the Invasions (54 B.C.-A.D. 43)" in *Aspects of Archaeology in Britain and Beyond: Essays Presented to O. G. S. Crawford*, ed. W. F. Grimes (London: H. W. Edwards, 1951), pp. 322-44.

31. *IV.5.3*.

32. E. Badian, *Foreign Clientelae* (264-70 B.C.) (Oxford: At the Clarendon Press, 1958), especially pp. 1-14.

33. See Alban D. Winspear and Lenore K. Geweke, *Augustus and the Reconstruction of Roman Government and Society*, University of Wisconsin Studies in the Social Sciences and Philosophy no. 24 (Madison, Wis.: University of Wisconsin, 1935), p. 244.

34. See Sands, *Client Princes*, for a functional study of the spheres of Roman control. Page 77 deals with dynastic policy, and pp. 88-89 with foreign policy.

35. See David Magie, *Roman Rule in Asia Minor to the End of the Third Century after Christ*, 2 vols. (Princeton: Princeton University Press, 1950), vol. I, pp. 437, 476, 553-61.

36. Cheesman, *Auxilia*, pp. 15-16; and Sands, *Client Princes*, pp. 103-6.

37. Suetonius, *Augustus*, 23; *idem*, *Tiberius*, 17.

38. *Germania*, 37.

39. See Parker, *Roman Legions*, pp. 139-40, 162-63.

40. See, e.g., Stevenson, *Roman Provincial Administration*, pp. 47-50.

41. *Annals*, IV.24.

42. *Deiolarus*, 22.

43. See René Cagnat, *L'Armée romaine d'Afrique et l'occupation militaire de l'Afrique sous les empereurs*, 2d ed. (Paris: Ernest Leroux, 1913), pp. 7-24.

44. Ronald Syme, *CAH* 10: 356.

45. Perhaps the most striking instance of a seemingly disproportionate (though politically valid) investment of military effort was the siege of Masada. For the magnitude of the engineering effort, see I. A. Richmond, "The Roman Siege-Works of Masada, Israel," *JRS* 52 (1962): 142-55.

46. See Sands, *Client Princes*, p. 155, n. 2, and Tacitus, *Annals*, XII.29.

47. Mommsen (*Hist.*, III, pp. 234-36), cited by Stevenson, *Roman Provincial Administration*, p. 37.

48. In spite of a justly renowned road system, movements on land were of course very slow (3 mph for marching troops, then as now, or 24-30 miles a day at most). Inter-sector journeys (e.g., Pannonia to eastern Anatolia) would accordingly take up much of a campaigning season. Movements at sea could be much faster and often much more direct. See Lionel Casson, *Ships and Seamanship in the Ancient World* (Princeton: Princeton University Press, 1971). Casson cautions against taking instances of record-breaking journeys as indicative of normal seaborne mobility.

49. Bernard W. Henderson, *Five Roman Emperors: Vespasian, Titus, Domitian, Nerva, Trajan (A.D. 69-117)* (Cambridge: At the University Press, 1927), p. 60.

50. See Parker, *Roman Legions*, p. 148.

51. Parker, *Roman Legions*, pp. 89, 271.

52. Cheesman, *Auxilia*, p. 59.

53. Sands, *Client Princes*, p. 103.

54. *The Jewish War*, III.4.2. Cf. *ibid.*, II.18.9.

55. Tacitus, *Germania*, 33.

56. See, e.g., E. Badian, *Roman Imperialism in the Late Republic*, 2d ed. (Oxford: Basil Blackwell, 1958), pp. 29-43.

57. *Annals*, IV.5.

58. Excerpts from A. H. M. Jones, ed., *A History of Rome Through the Fifth Century*, 2 vols. (New York: Harper & Row, 1970), vol. 2, pp. 148-49.

59. The distinction is considered in Badian, *Roman Imperialism*, p. 4.

60. See Bowersock, *Augustus and the Greek World*, pp. 42-61.

61. W. W. Tarn in *CAH* 10: 113-15.

62. Bowersock, *Augustus and the Greek World*, p. 46.

63. Josephus, *The Jewish War*, I.23.1, I.27.6.

64. On Eurycles and his removal, see Bowersock, *Augustus and the Greek World*, pp. 59-60; Josephus, *The Jewish War*, I.26.1-4.

65. Sands, *Client Princes*, p. 93.

66. Bowersock, *Augustus and the Greek World*, p. 56.

67. Sands, *Client Princes*, p. 93.

68. Tacitus, *Annals*, II.42. Ronald Syme, in *CAH* 11: 139, dismisses the accusation against Antiochus as a "flimsy pretext."

69. Badian, *Foreign Clientelae*, p. 12.

70. Bowersock, *Augustus and the Greek World*, p. 51, 53.

71. Josephus, *The Jewish War*, I.20.4.

72. Dobiáš, "King Maroboduus," p. 156.

73. See R. E. M. Wheeler, *Rome Beyond the Imperial Frontiers* (London: G. Bell and Sons, 1954), pp. 91-94, on the relationship between trade and migration routes.

74. Tacitus, *Agricola*, 21.

75. Dobiáš, "King Maroboduus," p. 161.

76. For an extended analysis of armed "suasion" (i.e., the political application of military force), see Edward N. Luttwak, *The Political Uses of Sea Power* (Baltimore: Johns Hopkins University Press, 1974), ch. 1.

77. For a narrative, see T. Rice Holmes, *The Architect of the Roman Empire*, 27 B.C.-A.D. 14, 2 vols. (Oxford: At the Clarendon Press, 1928-1931) vol. 2, pp. 116-21. For an analysis, see Dyson, "Native Revolts," pp. 253-258, and the reconstruction in Harmand, *L'Occident romain*, pp. 86-93.

78. See Chevallier, "Rome et la Germanie," pp. 271-73.

79. See Colin D. Gordon, "The Subsidization of Border Peoples as a Roman Policy of Imperial Defense" (Ph.D. diss., University of Michigan, 1948) (LC microfilm AC-1, no. 1105).

80. See Harmand, *L'Occident romain*, pp. 86-93.

81. Tacitus, *Annals*, XI.16.

82. This diplomacy cannot be faulted on moral grounds without reference to necessity. But see A. Alföldi, "The Moral Barrier on the Rhine and Danube" in *Congress of Roman Frontier Studies*, 1949, ed. E. B. Birley (Durham: Durham University, 1952), pp. 1-16, esp. p. 8.

83. See, e.g., Tacitus, *Germania*, 33.

84. See Thompson, *Early Germans*, pp. 93-99; and Dobiáš, "King Maroboduus," pp. 163-165.

85. *Germania*, 42.

86. Gordon, "Subsidization," pp. 11-34.

87. Tacitus, *Annals*, II.45, 46.

88. *Ibid.*, II.46.

89. *Ibid.*, II.62.

90. *Ibid.*, II.63.

91. Gordon, "Subsidization," p. 23.

92. Tacitus, *Annals*, XII.29.

93. Suetonius, *Gaius*, 43-46.

94. Tacitus, *Annals*, XI.19.

95. *Ibid.*, XII.27, 28.

96. J. G. C. Anderson in *CAH*, 10: 744-45.

97. Isoghli (near Melitene), where there was a bridge on the key highway to Nisibis, was in Cappadocia, but the crossing at Samosata, astride the road into Mesopotamia by way of Edessa and Carrhae, was in Commagene. The most important crossing was at Zeugma (Balkis) in N.E. Syria, linked to the Mediterranean by way of the Orontes valley. See Scramuzza, *Emperor Claudius*, pp. 193-95, and M. Cary, *The Geographic Background of Greek and Roman History* (Oxford: At the Clarendon Press, 1949), pp. 181-82.

98. J. G. C. Anderson, *CAH*, 10: 744-45.

99. *Ibid.*, p. 750 (for Antiochus IV) and p. 751 (for Sohaemus and the sons of Cotys); see also M. P. Charlesworth in *CAH*, 10: 660-61.

100. Josephus, *The Jewish War*, II.9.6; Albino Garzetti, *L'impero da Tiberio agli Antonini*, Istituto di Studi Romani, Storia di Roma, vol. 6 (Bologna: Licinio Cappelli, 1960), pp. 98-100. The characterization is Garzetti's ("avventuriero orientale"). See also Martin P. Charlesworth, *Five Men: Character Studies of the Roman Empire*, Martin Classical Lectures, vol. 6 (Cambridge, Mass.: Harvard University Press, 1936), pp. 3-30.

101. Cf. Duncan Fishwick, "The Annexation of Mauretania," *Historia* 20 (1971): 467-68.

102. J. G. C. Anderson, *CAH* 10: 752; Magie, *Roman Rule*, pp. 540-53.

103. J. G. C. Anderson, *CAH* 10: 752.

104. Scramuzza, *Emperor Claudius*, p. 185. Cf. Tacitus, *Annals*, XII.21.

105. See Donald Dudley and Graham Webster, *The Roman Conquest of Britain* (London: Dufour, 1965), p. 184.

106. Denis Van Berchem, "Conquête et organisation par Rome des districts Alpins," *REL* 11 (1962): 231.

107. M. P. Charlesworth in *CAH* 10: 682.

108. See Parker, *Roman Legions*, pp. 9-20, and Webster, *Roman Army*, pp. 27-30, both based on the sixth book of Polybius.

109. Jacques Harmand, *L'Armée et le soldat à Rome (de 107 à 50 avant notre ère)* (Paris: A. et J. Picard et Cie., 1967), p. 39.

110. See Paul Coussin, *Les Armes romaines: Essai sur les origines et l'évolution des armes individuelles du légionnaire romain* (Paris: Librairie ancienne Honoré Champion, 1926), *passim*.

111. On the uncertain evidence on post-Marian legionary cavalry, see Harmand, *L'Armée et le soldat*, p. 46. Also Manuel Marin y Peña, *Instituciones militares romanas*, Enciclopedia Clasica, no. 2 (Madrid: Consejo Superior de Investigaciones Científicas Patronato "Menéndez y Pelayo," 1956), p. 74, para. 137.

112. Parker, *Roman Legions*, p. 43.

113. But the *hasta* did not disappear; see Coussin, *Les Armes*, pp. 359-60.

114. The sole evidence for the number is Josephus, *The Jewish War*, III.6.2.

115. See Eric William Marsden, *Greek and Roman Artillery: Historical Development* 2 vols. (Oxford: At the Clarendon Press, 1969), I:183. The enthusiasm of Vegetius (*Epitoma rei militaris*, II.11) should perhaps be treated with some reserve.

116. When Claudius ordered Cn. Domitius Corbulo to disengage from his reprisal operations against the Chauci, Corbulo put his men to work digging a canal between the Maas and Rhine. (See Tacitus, *Annals*, XI.20.) After the battle of Bedriacum in the civil war of A.D. 69, Vitellius sent the legio XIII Gemina to build amphitheaters at Cremona and Bononia (Tacitus, *Histories*, II.67). All the roads were of course built by the legions, which included *mensores* (surveyors) in their headquarters.

117. Frontinus, *Strategemata*, IV.7.2. Cited in Marsden, *Greek and Roman Artillery*, p. 183, n. 3.

118. Harmand, *L'Armée et le soldat*, p. 62, citing a 19th century French army experiment.

119. Joachim Marquardt, *De l'Organisation militaire chez les Romains*, rev. ed. A. Von Domaszewski, trans. J. Brissaud, Manuel des antiquités romaines de J. Marquardt et Th. Mommsen, II (Paris: A. Fontemoing, 1891), pp. 156, 192.

120. On the notoriously poor performance of the Roman cavalry, beginning with the battles against Hannibal, see Paul Vigneron, *Le Cheval dans l'antiquité gréco-romaine; des guerres médiques aux grandes invasions: Contribution à l'histoire des techniques*. Annales de L'Est, Mémoire no. 35 (Nancy: Faculté des lettres et de Sciences humaines 1968), vol. 1, pp. 261-64.

121. The sling lost all military importance long ago, but see J. Harmand, *L'Armée et le soldat*, p. 77. On range comparability, see W. McLeod, "The Range of the Ancient Bow," *Phoenix* 19 (1965): 14. R. W. Davies, in the "The Romans at Burnswark," *Historia* 21 (1972): 105-6, has argued that slingers were never a regular element in the Roman army.

122. Tacitus, *Histories*, IV.12-80 and V.14-26. For the legions involved, see Parker, *Roman Legions*, pp. 143-45.

123. *Strategemata*, II.7.3,5.

124. *Crassus*, 27.6,7.

125. Tacitus, *Histories*, IV.71.

126. See below, chapter 3.

127. Tacitus, *Annals*, I.49.

128. Velleius Paterculus, II.117.

129. Harmand, *L'Armée et le soldat*, p. 46, n. 136.

130. After the "social war" (i.e., after 88 B.C.) the Italians, having all become citizens, no longer fought as auxiliaries, but as legionaries. (Ibid., p. 40 and n. 101.) On the role of the cavalry at that time, see pp. 46-51.

131. R. W. Davies, "Appendix" (cited in note 4, above). Davies suggests that there were 480 and 800 foot soldiers in the cohorts *quingenaria* and *milliaria*, respectively.

132. They are not attested before the Flavian period; it is uncertain when they were first organized.

133. See the brief definitions in Vigneron, *Cheval*, p. 235.

134. See, e.g., Josephus, *The Jewish War*, III.5.5. Josephus's *kontus* is clearly a shock weapon, and the cavalry equipped with it is clearly that of the regular *auxilia* as opposed to client-state or irregular troops.

135. For the cavalry aspects of the battle, see Vigneron, *Cheval*, pp. 297-99.

136. XXII.37. Cited in Cheesman, *Auxilia*, p. 8.

137. BG II.7.1.

138. See note 118 above.

139. See the careful analysis in Marsden, *Greek and Roman Artillery*, p. 9 n. Marsden shows the composite nature of Odysseus's bow in his analysis of Homer's text (p. 10).

140. McLeod, "Range of the Ancient Bow," p. 8.

141. Ibid.

142. Tacitus, *Annals*, I.56 and II.20. Cf. Suetonius, Gaius, 46.

143. See Marsden, *Greek and Roman Artillery*, p. 184, who simply assumes it; but the presence of artillery among the often primitive troops of the *auxilia* would be surprising. When Civilis and his auxiliary troops besieged the camp at Vetera, they used siege engines built by Roman prisoners and deserters, i.e., legionary troops; Tacitus, *Histories*, IV.23.

144. See the examples cited in Thompson, *Early Germans*, pp. 131-40.

145. Ibid., pp. 146-49.

146. Ronald Syme, *CAH* II: 146, based on Dio, LXVII.4.6.

147. Suetonius, *Domitian*, 7.

148. Syme, "Some Notes on Roman Legions", (n. 1) p. 33.

149. Ibid.

150. Tacitus, *Annals*, IV.5; the deployment structure did not change until two new legions were raised (XV *Primigenia* and XXII *Primigenia*) and preparations began for the invasion of Britain, c.a. A.D. 42-43; see Parker, *Roman Legions*, p. 129.

151. A letter of Pliny (LXXIV) has suggested the possibility of Daco-Parthian contacts; some scholars have taken the suggestion seriously, e.g., Henderson, *Five Roman Emperors*, pp. 273-74. For another view, see A. N. Sherwin-White, *The Letters of Pliny* (Oxford: At the Clarendon Press, 1966), p. 662.

152. Fifty km. east of Vienna. This was the southern pincer of the operation; a second pincer was to advance eastward from Mainz (on the Rhine), and the two armies were to meet on the Elbe. About 150,000 troops were involved in this vast operation. See Tacitus, *Annals*, II.46 and XI.16; and Velleius Paterculus, II.109.

153. See Syme, *CAH* 10:369-73; Holmes, *Architect of the Roman Empire*, vol. 2, pp. 111-15; and Dyson, "Native Revolts," pp. 250-52.

154. In A.D. 8 there may have been more than a hundred thousand troops engaged in suppressing the revolt: ten legions, seventy cohorts of auxiliary foot, ten cavalry *alae*, and large forces of irregulars, primarily Thracian cavalry supplied by Rhometalces I, client-king of Thrace; Syme, *CAH* 10:372.

155. The argument that follows is based on P.A. Brunt, *JRS* 53 (1963): 170-76 (review of Hans D. Meyer, *Die Aussenpolitik des Augustus und die Augusteische Dichtung*). For the injunction, see Tacitus, *Annals*, I.11. For the objection, see idem, *Agricola*, 13. Tacitus, of course, was writing at a time when conquest was in the air; see Ronald Syme, *Tacitus* 2 vols. (Oxford: At the Clarendon Press, 1958), vol. 1, pp. 10-29.

156. Tacitus, *Annals*, II.46. Cf. Parker, *Roman Legions*, pp. 82-85, *passim*.

157. See Syme, *CAH* 10:353.

158. This is an important subsidiary argument in Brunt's thesis, based on A. Klotz. Apparently in Augustan times the Romans thought that the distance from the Rhine to the Vistula, i.e., across the full width of "Germany," was less than the distance from the Pyrenees to the Rhine (636/686 miles vs. 920), the latter two being thought to be parallel. Similarly, the distance from the Vistula to the ocean on the far side of China was thought to be less than three times the distance from the Pyrenees to the Rhine (i.e., 2,560/2,660 miles). Since Julius Caesar had conquered Gaul in ten years with a force which never exceeded ten legions the conquest of all of Germany must have seemed a perfectly feasible proposition. A recent reexamination of the evidence endorses Klotz's conclusions and estimates; see J. J. Tierney, "The Map of Agrippa," *Proceedings of the Royal Irish Academy*, vol. 63, section C, no. 4 (1963), pp. 154-60.

## CHAPTER TWO

1. Jacques Harmand, *L'Armée et le soldat à Rome (de 107 à 50 avant notre ère)* (Paris: A. et J. Picard et Cie., 1967), p. 132, n. 240.

2. Graham Webster, *The Roman Imperial Army of the First and Second Centuries A.D.* (London: Adam and Charles Black, 1969), pp. 170-71.

3. See, e.g., the camps described in I. A. Richmond, "The Romans in Redesdale," *History of Northumberland* 15 (1940): pp. 116-29.

4. Harmand, *L'Armée*, pp. 121-28. Harmand's survey of castrametation, pp. 99-135, is comprehensive.

5. E.g., Webster, *Roman Imperial Army*, p. 171: "This [the palisade] was merely a fence to keep out stray natives and wild animals." See also Harmand, *L'Armée*, pp. 129-34, where similar opinions are cited.

6. Roman troops seemingly marched from a "very early breakfast" (6 A.M.?) to midday (1 P.M.?), with the rest of the day given over to camp-building and rest; Frank E. Adcock, *The Roman Art of War Under the Republic*, Martin Classical Lectures 8 (Cambridge, Mass.: Harvard University Press, 1940), p. 13.

7. The figures are from the technical manual *Liber de munitionibus castrorum*, sect. 49 (trench) and sect. 50 (rampart).

8. *Ibid.*

9. From Albert Harkness, *The Military System of the Romans* (New York: D. Appleton and Company, 1887), p. xlix.

10. Adcock, *Roman Art of War*, pp. 13-15.

11. *Liber de munitionibus castrorum*, sect. 1.

12. Adcock, *Roman Art of War*, p. 15. Cf. Harmand, *L'Armée*, p. 129, n. 226, p. 130, n. 228, and generally pp. 129-34.

13. Adcock, *Roman Art of War*, p. 14.

14. *Res Gestae*, 31.

15. G. Forni in *DE*, vol. 4, fasc. 40, s.v. "Limes," p. 1,280. See also Antonio Frova, "The Danubian Limes in Bulgaria, and Excavations at Oescus," *The Congress of Roman Frontier Studies* 1949, ed. E. B. Birley (Durham: Durham University, 1952), pp. 25-26. Frova cites and endorses D. Krundjalov's theory of a Domitianic date for the "Great Earthwork," as well as a pre-Roman dating for the "Small Earthwork" and a Constantinian dating for the stone wall. But cf., also Em. Condurachi, Ion Barnea, and Petre Diaconu, "Nouvelle recherches sur le Limes Byzantin au Bas-Danube aux X<sup>e</sup>-XI<sup>e</sup> siècles" in *Proceedings of the XIII International Congress of Byzantine Studies*, ed. J. M. Hussey, D. Obolensky, and S. Runciman (Oxford: At the Clarendon Press, 1967), p. 179, which casts doubts on the rest of Krundjalov's chronology.

16. A fifteen-mile double-ditch wall in northern Mesopotamia closes a gap between the natural defenses of the Khabur River to the west and the high ground of the Jebel Sinjar to the east, thus blocking off an otherwise easy access route to the key city of Nisibis from the south. See R. E. M. Wheeler, "The Roman Frontier in Mesopotamia," in *Congress of Roman Frontier Studies*, 1949, p. 126 and map, p. 115.

17. See the discussion of the various meanings of *limes* by G. Forni in *DE*, vol. 4, fasc. 34, pp. 1,075-83. The "horizontal" *limes* here discussed corresponds to Forni's type h, pp. 1,081-82.

18. *Ibid.*, p. 1,084.

19. E.g., A. Alföldi in *CAH* 12: 213; H. C. Pflaum, "Forces et faiblesses de l'armée romaine du Haut-Empire," in *Problèmes de la guerre à Rome*, ed. Jean-Paul Brissson (Paris and The Hague: Mouton and Co., 1969), p. 96; Erich Swoboda, "Traian und der Pannonische Limes" in *Les Empereurs romains d'Espagne*, Colloques internationaux du centre national de la recherche scientifique (Paris: Centre national de la recherche scientifique, 1965), p. 197. Cf. Denis van Berchem, *L'Armée de Dioclétien et la réforme constantinienne*, Institut français d'archéologie de Beyrouth, Bibliothèque archéologique et historique, vol. 56 (Paris: Librairie orientale Paul Geuthner, 1952), p. 104.

20. E.g., Wilhelm Weber in *CAH* 11: 312-13; G. R. Watson, *The Roman Soldier* (London: Thames and Hudson, 1969), p. 67, commenting on Vegetius's "obsession" with defense; C. M. Wells, *The German Policy of Augustus: An Examination of the Archeological Evidence* (Oxford: At the Clarendon Press, 1972), p. 246, deprecating the "Magenot Line mentality" of the Flavians. In fact, it appears that a reference to the ill-fated Maginot Line is de rigueur in modern analyses of Roman frontiers.

21. On the turrets, see E. B. Birley, *Research on Hadrian's Wall* (Kendal: Titus Wilson and Son, 1961), pp. 103-10. For the latest survey of the state of research on Hadrian's

Wall, see David T. Breeze and Brian Dobson, "Hadrian's Wall: Some Problems," *Britannia* 3 (1973): 182-208.

22. Birley, *Research*, pp. 227-33.

23. Jean Baradez, *Vue aérienne de l'organisation romaine dans le Sud-Algérien, Fossatum Africae* (Paris: Arts et métiers graphiques, 1949), p. 359. But see Denis van Berchem, *L'Armée de Dioclétien*, p. 44, where doubts are expressed as to the chronological coherence of the outposts and fossatum proper.

24. See Webster, *Roman Imperial Army*, pp. 246-48. For the shortcomings of such means of communication, see R. J. Forbes, *Studies in Ancient Technology* 6 (Leiden, 1967).

25. See Anne S. Robertson, "The Antonine Wall," in *Congress of Roman Frontier Studies*, 1949, p. 102.

26. I. A. Richmond, "Trajan's Army on Trajan's Column," *Papers of the British School at Rome* 13 (1935): 34-36.

27. *Idem*, "A Roman Arterial Signalling System in the Stainmore Pass," in *Aspects of Archeology in Britain and Beyond: Essays presented to O. G. S. Crawford*, ed. W. F. Grimes (London: H. W. Edwards, 1951), pp. 293-302.

28. See A. Poidebard, *La Trace de Rome dans le désert de Syrie: Le limes de Trajan à la conquête arabe, recherches aériennes (1925-1934)* (Paris: Librairie orientale Paul Geuthner, 1934); for other "open" *limites* see G. W. Bowersock, "A Report on Arabia Provincia," *JRS* 61: (1971): 236-42; and Maurice Euzennat, "Le Limes de Volubilis" in *Studien zu den Militärgrenzen Roms*, Vorträge des 6. Internationalen Limes-Kongresses in Süddeutschland (Cologne and Graz: Bohlau, 1967), pp. 194-99.

29. See David Magie, *Roman Rule in Asia Minor to the End of the Third Century after Christ*, 2 vols. (Princeton: Princeton University Press, 1950), 1: 571.

30. F. A. Lepper, *Trajan's Parthian War* (London: Geoffrey Cumberledge, 1948), p. 108.

31. The thickness of the wall (and therefore the rampart walk—minus the parapet) varied from as little as five feet six inches to a maximum of ten feet; see Birley, *Research*, pp. 84-85.

32. E.g., Denis van Berchem, *L'Armée de Dioclétien*, p. 126; similarly, Wheeler, "Roman Frontier in Mesopotamia," p. 126.

33. See Jacques Harmand, *La Guerre antique, de Sumer à Rome* (Paris: Presses universitaires de France, 1973), pp. 177-78, for a list of pre-Roman linear barriers and their military function.

34. Birley, *Research*, p. 79.

35. Data of F. G. Simpson and Parker Brewis, cited in *ibid.*, pp. 86-87.

36. See Jean Baradez, "Compléments inédits au 'Fossatum Africae,'" in *Studien zu den Militärgrenzen Roms*, p. 200.

37. S. A. M. [sic] Gichon, "Roman Frontier Cities in the Negev," *Quintus Congressus Internationalis Limitis Romani Studiosorum*, Acta et Dissertationes Archaeologicae (Zagreb), *Arheoloski Radovi i Rasprave* (1963): 201. Gichon draws attention to Sura 37 of the Koran, which alludes to the severe obstacle that even a simple ditch can constitute for desert raiders, whose tactics rely on speed and surprise.

38. F. G. Simpson and R. C. Shaw, "The Purpose and Date of the Vallum and Its Crossings," *C-W*, n.s. 27 (1922): 39. Cf. E. A. Thompson, *The Early Germans* (Oxford: Clarendon Press, 1965), pp. 114-15.

39. In the case of Hadrian's Wall, the barrier was much reinforced on the inward side by the so-called Vallum, a flat-bottomed trench twenty feet wide at the top, eight feet wide at the bottom and ten feet deep, the trench being set between six-foot-high ramparts formed by the upcast; together with the berms, the width of the earthwork amounted to 120 feet, a Roman *actus*; see I. A. Richmond, "Hadrian's Wall 1939-1949," *JRS* 40 (1950): 51-52. Until recently, the construction of this uniquely elaborate inward barrier was sometimes held to have preceded that of the wall; accordingly, its function could be explained as that of a wall-substitute. But new archeological evidence has shown that the construction of the Vallum was in fact concurrent with or even later than that of the wall; see *ibid.*, pp. 51-52, and Birley, *Research*, pp. 118-25. Even before this evidence came to light, F. G. Simpson and R. C. Shaw had argued convincingly

that the Vallum could hardly have been used as a substitute outward barrier, while it was over-elaborate as a simple patrol track; Simpson and Shaw, "Purpose and Date of the Vallum," pp. 359-60, quoting T. H. Hodgson: "bar gunpowder, a party of schoolboys could stone the best troops of the world out of the Vallum." F. Haverfield hypothesized that owing to its obvious limitations as a fighting rampart, the Vallum marked the limit of civil jurisdiction as against the wall's military perimeter; R. G. Collingwood developed this theory further, suggesting that the Vallum was a customs barrier (under procuratorial control) while the wall was a military perimeter (under the control of the Legate). But since the Vallum is generally located so it can be observed from the wall turrets, and because of the implausibility of such a large construction effort for a minor jurisdictional purpose, these theories are no longer accepted; see John Morris, "The Vallum Again" C-W, n.s., 50, (1950): 43-53.

40. R. G. Collingwood theorized that the "curtain" could be used as a screen to mask the lateral approach of forces which could then emerge rapidly through the sally ports to intercept the enemy; see "The Purpose of the Roman Wall" in *Vasculum* 8 (1920): 4-9. This theory has been demolished by archeological evidence indicating that the road running parallel to the inner side of the wall was not built until a century after the rest of the wall complex; see Birley, *Research*, pp. 113-14. The second theory, which cannot be contradicted by archeological evidence but which is militarily implausible, is that of I. A. Richmond. It is explained most fully in John Collingwood Bruce, *Handbook to the Roman Wall*, 12th ed., ed. I. A. Richmond (Newcastle: H. Hill Hindson and A. Reid, 1966), pp. 25-26. In Richmond's view, Roman troops in their offensive sallies would use the curtain in order to corral the enemy, who would be squeezed between the defenders (now out in front of the wall) and the obstacle ditch behind them.

41. Baradez, *Fossatum Africae*, p. 359.

42. The structures of Hadrian's Wall as originally built are themselves eloquent testimony to the underlying tactical scheme; the forts built along the wall were provided with three twin portal gates, the last opening on the far side of the curtain. It is obvious that these gates were to serve as sally ports for a mobile and offensive defense. It is also apparent that the outpost forts were to provide early warning before, and base security during, these interception sallies, if a prolonged pursuit were necessary. But for a rebuttal of the general applicability of this scheme, see Swoboda, "Traian und der Pannonische Limes," pp. 195-208. Swoboda denies that the Romans at this time relied on mobile forward defense operations beyond the Danube in order to defend the Pannonian frontier; in particular, he maintains that the buildings of Roman construction (or rather, those incorporating Roman materials) found in a zone twenty to ninety kilometers beyond the river were *not* outposts.

43. *Ibid.*, p. 197.

44. Eric B. Birley, "Alae and Cohortes Milliariae" in *Corolla Memoriae Erich Swoboda Dedicata*, Römische Forschungen in Niederösterreich V (Graz and Cologne: Hermann Böhlau, 1966), p. 57; the unit establishments have been approximated at 1,000 and 500 for the milliary and quingenary units, respectively.

45. In Britain, for example, five of the seven attested milliary cohorts and thirty-one of the forty-six quingenary cohorts were *equitatae*; see R. W. Davies, "Cohortes Equitatae" *Historia* 20 (1971): 751, n. 1. But Britain was probably atypical. In Lower Germany there were six attested *cohortes equitatae* and as many infantry cohorts—all quingenary—during the period A.D. 104-20; earlier, when the sector had been more active, in A.D. 70-83, there is epigraphical evidence for eleven quingenary *cohortes equitatae* but only eight infantry cohorts, and there was also one milliary *cohors equitata* and two milliary infantry cohorts; Géza Alföldy, "Die Hilfstruppen der römischen Provinz Germania Inferior" in *Epigraphische Studien*, no. 6 (Düsseldorf: Rheinland Verlag, 1968), p. 151.

46. G. L. Cheesman, *The Auxilia of the Roman Imperial Army* (Oxford: At the Clarendon Press, 1914), p. 168.

47. Birley, *Research*, p. 272. Birley states that nearly one quarter of the infantry (13,000 men) was mounted, hence the "three thousand light cavalry" figure; but see note 55 below.

48. See G. Alföldy, "Die Hilfstruppen," p. 151.

49. Tacitus, *Historiae*, I. 79. Note the number: 9,000 mounted Roxolani were involved, obviously a major attack.

50. Thompson, *Early Germans*, p. 116.

51. But see Watson, *Roman Soldier*, pp. 62-64, where doubts are cast on some estimates of the weight of individual kits.

52. Tiberius, 18.

53. H. M. D. Parker, *The Roman Legions* (1928; rpt. ed., with corrections and bibliography, Cambridge: W. Heffer and Sons, 1958), pp. 155, 162.

54. Wales required an active occupation force until the end of Roman rule and was never fully pacified. M. G. Jarrett, "The Roman Frontier in Wales" in *Studien zu den Militärgrenzen Roms*, pp. 21-31.

55. Birley, *Research*, p. 272. Birley gives a total of 13,000 infantry, but this appears to include 3,000 men assigned to guard duties in the milecastles; *ibid.*, p. 271 (although Birley has also suggested that these troops may have belonged to separate units of *numeri*). Cf. Sheppard S. Frere, *Britannia: A History of Roman Britain* (London: Routledge and Kegan Paul, 1967), p. 137. Frere's figure of 9,500 men for the sixteen wall forts is not reconcilable with Birley's figures.

56. Richmond, "Hadrian's Wall 1939-1949," p. 47.

57. Birley, *Research*, p. 271, opts for the higher figure. Frere, *Britannia*, p. 137, cites a range of 1,500 to 2,000 troops and points out that there is no evidence that these men belonged to *numeri* rather than regular *auxilia*, as Birley has suggested.

58. Birley, *Research*, pp. 106-9.

59. In addition to Birley's figures given in *Research*, p. 272, 11,000 legionary troops are assumed to have been on establishment and available.

60. G. Forni in *De*, vol. 4, fasc. 38, s.v. "Limes," pp. 1212-13. This refers to the later Antonine period. The major fort of Aalen was built under Antoninun Pius, while Pfünz and Kösching were rebuilt, all being well behind the perimeter line; H. Schönberger, "The Roman Frontier in Germany: An Archaeological Survey," *JRS* 59 (1969): 170.

61. The trend seemed much clearer a generation ago than it is now; cf. Olwen Brogan, "The Roman Limes in Germany," *Archaeological Journal* 92 (1935): 17-18, with Schönberger, "Roman Frontier in Germany," pp. 164-65; see also Émilienne Demougeot, *La Formation de l'Europe et les invasions barbares: Des origines germaniques à l'avènement de Dioclétien* (Paris: Aubier, 1969), pp. 189-90. For Britain, see Richmond, "Hadrian's Wall 1939-1949," pp. 45-46, 55; see also Birley, *Research*, pp. 134-55, on the Stanegate, the line on which the original chain of forts was built.

62. As Alföldy does in *CAH* 12:213.

63. See Thompson, *Early Germans*, pp. 146-49.

64. Suetonius, *Domitianus*, 7.

65. Morris, "Vallum Again," p. 50. The argument is developed further in Eric B. Birley, "Hadrianic Frontier Policy" in *Carnuntina, Vorträge beim internationalen Kongress der Altertumswissenschaften, Carnuntum, 1955*, ed. E. Swoboda, *Römische Forschungen in Niederösterreich*, 3 (Graz and Cologne, 1956), pp. 26-33.

66. Chester G. Starr, Jr., *The Roman Imperial Navy, 31 BC-AD 324*, Cornell Studies in Classic Philology, vol. 26 (Ithaca: Cornell University Press, 1941), pp. 135-37 (*Classis Moesica*); pp. 138-41 (*Classis Pannonica*); and pp. 144-52 (*Classis Germanica*). Between December and February the Danube freezes, and the river fleets could not operate. This was a recognized seasonal danger (*ibid.*, pp. 138-41), since the land-based surveillance system was much less effective without the support of the river fleets.

67. Gichon, "Roman Frontier Cities," pp. 195-207; see also *idem*, "The Origin of the Limes Palestinae and the Major Phases of Its Development" in *Studien zu den Militärgrenzen Roms*, pp. 178, 184. See also the fuller account in Shimon Applebaum and Mordechai Gichon, *Israel and Her Vicinity in the Roman and Byzantine Periods* (Tel Aviv: Tel Aviv University Press, 1967), pp. 37-47. Cf. Euzennat, "Le Limes de Volubilis," pp. 194-99, for an open *limes* (in Mauretania) organized in a remarkably precise checkerboard pattern. On the *Limes Tripolitanus* as well, we know of no continuous linear barrier,

while road building began as early as A.D. 15-16. See R. G. Goodchild and J. B. Ward Perkins, "The *Limes Tripolitanus* in the Light of Recent Discoveries," *JRS* 39 (1949): 81-95.

68. Roads were always the primary infrastructures of the Syrian *limes*; see Raymond Chevallier, *Les Voies romaines* (Paris: Librairie Armand Colin, 1972), pp. 160-65.

69. Baradez, *Fossatum Africae*, pp. 163-208, esp. pp. 202-8, or idem, "Organization militaire romaine de l'Algérie antique et évolution du concept défensif de ses frontières," *Revue internationale d'histoire militaire* 13 (1953): 25-42.

70. Albino Garzetti, *L'Impero da Tiberio agli Antonini*, Istituto di Studi Romani, Storia di Roma, vol. 6 (Bologna: Licinio Capelli, 1960), p. 437.

71. It was only in the Black Sea that the *Classis Moesica* and the *Classis Pontica* had to deal with any seaborne opposition, and that was small scale, from pirates. Starr, *Roman Imperial Navy*, pp. 127-28.

72. See Lionel Casson, *Ships and Seamanship in the Ancient World* (Princeton: Princeton University Press, 1971), p. 270. Cf. Moché Amit in "Les Moyens de communication et la défense de l'empire romain" in *La Parola del Passato*, vol. 20, fasc. 102 (1965), p. 218. Casson cites the navigation season specified by Vegetius (IV.39), May 27 to September 14, with outer limits of March 10 to April 13. Cf. E. de Saint-Denis, "Mare Clausum," *Revue des Études Latines* 25 (1947): pp. 200-203, where it is pointed out that there was some winter navigation, but passages were short and risks were much greater than normal.

73. Casson, *Ships and Seamanship*, p. 285.

74. *Ibid.*, p. 293.

75. This corresponds to the *magnum iter* (with no day of rest) as opposed to the *justum iter* of 10,000 steps; see Chevallier, *Voies romaines*, pp. 224-25. Amit, "Moyens de communication," *passim*, calculates Roman strategic mobility on the basis of the twenty to twenty-four Roman miles claimed by Vegetius (I.9) for the "ancients," converted by Amit to thirty to thirty-six kilometers. This seems much too high; it is appropriate for a brisk exercise but not for long distance marching. Cf. Watson, *Roman Soldier*, p. 55.

76. E.g. Tacitus, *Histories*, I.31, re German troops sent to Alexandria and recalled. Nor is this detrimental effect surprising: the trip could be prolonged to fifty or seventy days; Casson, *Ships and Seamanship*, p. 289, n. 82.

77. Starr, *Roman Imperial Navy*, pp. 186-87. Sixty galleys sufficed to transport an entire legion. On the horses, see Albert Marin, *Dictionnaire des antiquités grecques et romaines*, ed. Charles Daremberg et Edm. Saglio, 9 vols. (Paris: Librairie Hachette, 1877-1919), vol. 3, pt. 2, s.v. "Hippagogi."

78. See Parker, *Roman Legions* pp. 119, 158, 168—with minor adjustments. For A.D. 161 see Watson, *Roman Soldier*, pp. 15-16, based on ILS 2288 (= CIL VI 3492), reproduced on p. 160. Cf. J. Szilágyi, "Les Variations des centres de prépondérance militaire dans les provinces frontalières de l'empire romain," *Acta Antiqua Academiae Scientiarum Hungaricae* 2 (1953), fasc. 1-2, pp. 119-219, which is an attempt to estimate actual force levels at nine points in time between A.D. 6 and the *Notitia Dignitatum*, and between eight sectors covering the entire perimeter. In practice, Szilágyi generally accounts for the *auxilia* by doubling the putative number of legionary troops, though he takes due notice of auxiliary deployments in the absence of legions, as in the provinces of Raetia, Noricum and, Mauretania.

79. Parker, *Roman Legions*, p. 167.

80. *Ibid.*, pp. 156-58. According to Parker, Trajan had twelve legions on the Danube on the eve of the first Dacian war, and thirteen for the second.

81. Bowersock, "Report on *Arabia Provincia*," pp. 232-33.

82. It is generally assumed that the XXII *Deiotariana* was disgraced or destroyed in the Jewish revolt of A.D. 132-35, but not necessarily in Judea. See Parker, *Roman Legions*, pp. 162-63. In addition, the IX *Hispana* may also have been lost in the Jewish revolt.

83. *Annals*, IV, 5.

84. See Parker, *Roman Legions*, p. 135, where it is conjectured that the VII *Claudia pia fidelis* was redeployed to Moesia in A.D. 58, leaving only the XI *Claudia pia fidelis* in

Dalmatia. What is certain is that the VII *Claudia pia fidelis* was redeployed to Viminacium over the period A.D. 42-66; see J. J. Wilkes, *Dalmatia: History of the Provinces of the Roman Empire* (London: Routledge and Kegan Paul, 1969), p. 96.

85. *Ibid.*

86. Until A.D. 6 three legions of the original four remained in Egypt; see Ronald Syme, "Some Notes on the Legions under Augustus," *JRS* 23 (1933): 25. In Spain the number of legions decreased from an estimate six in 27 B.C. to four in 13 B.C. and three by A.D. 9; *ibid.*, p. 22. Subsequently, one legion was removed under Claudius and a second during the civil war; Parker, *Roman Legions*, pp. 131, 144.

87. A total of eight new legions were raised and formed over the period spanned by the reigns of Gaius (A.D. 37-41) and Vespasian (A.D. 69-79), but four were disbanded in A.D. 70; see Gastone M. Bersanetti, *Vespasiano* (Rome: Edizioni Roma, 1941), pp. 75-79. This resulted in a total establishment of twenty-nine legions under Vespasian. Domitian created the legion I *Flavia Minerva* in A.D. 83 (see Parker, *Roman Legions*, p. 150), but the total declined to twenty-nine once more when the V *Alaudae* was lost in Domitian's Dacian war. The number only increased to thirty again with Trajan's formation of the XXX *Ulpia Victrix*; *ibid.*, p. 156.

88. G. Alföldy, *Die Hilfstruppen*, p. 151, and (third century), p. 161.

89. Birley, "Alae and Cohortes Milliariae," p. 60.

90. See Michael G. Jarrett and John C. Mann, "Britain from Agricola to Gallienus," *Bonner Jahrbücher* 170 (1970): 179-81. In *Agricola*, 24, Tacitus records his hero's friendly detention of an exiled Irish chief against a possible conquest of Ireland, which would have served to surround Britain completely with Roman armies: this definitely suggests a scheme of total conquest. But on the significance of any scheme of Agricola's, see Eric B. Birley, "Britain under the Flavians: Agricola and His Predecessors" in idem, *Roman Britain and the Roman Army: Collected Papers* (Kendal: Titus Wilson and Son, 1953), pp. 10-19.

91. Jarrett and Mann, "Britain from Agricola to Gallienus," p. 180.

92. Kenneth A. Steer, "The Antonine Wall: A Reconsideration" in *Studien zu den Militärgrenzen Roms*, p. 36.

93. See Anne S. Robertson, "The Antonine Wall," for a description of the structures, especially pp. 100-103.

94. Jarrett and Mann, "Britain from Agricola to Gallienus," p. 189.

95. Steer, "Antonine Wall: A Reconsideration," p. 38.

96. See the summary calculation in Grace Simpson, "The Roman Forts in Wales: A Reassessment," in *Studien zu den Militärgrenzen Roms*, p. 33, where the number of attested auxiliary units in Britain during the Hadrianic period is estimated at sixty-four, compared to seventy-nine occupied forts, excluding fortlets, signal stations, etc. Simpson has suggested (p. 34) that the increased manpower requirements entailed by the advance of the frontier to the Antonine Wall (when the number of occupied forts increased to 114) were satisfied by several expedients: some forts (e.g., in Wales) were evacuated, some were short-manned, some were manned by *numeri* troops (see below, pp. 122-23), some by legionary *vexillationes*, and some by rapidly redeployed forces on a circulating basis. For the same argument in greater detail, see Grace Simpson, *Britons and the Roman Army: A Study of Wales and the Southern Pennines in the 1st-3rd Centuries* (London: The Gregg Press, 1964), pp. 119-21. Cf. Frere, *Britannia*, pp. 160-61.

97. See A. R. Birley, "Excavations at Carpow," in *Studien zu den Militärgrenzen Roms*, p. 4, for evidence that the Severan fort of Carpow on the Perthshire-Fife county border (in Scotland) was intended for permanent occupation. See Anthony R. Birley, *Septimius Severus: The African Emperor* (London: Eyre & Spottiswoode, 1971), pp. 258-61, for the Severan campaign in Britain and a discussion of his policy.

98. Starr, *Roman Imperial Navy*, pp. 144-52.

99. On specific instances, see Schönberger, "Roman Frontier in Germany," pp. 157-58, 164-65, though there were of course differences in emphasis and priority (as well as interpretation), as cited.

100. *Ibid.*, p. 155. On the strategy in general, see also Ronald Syme in CAH 11: 160-61; and Louis Harmand, *L'Occident romain: Gaule, Espagne, Bretagne, Afrique du Nord* (31 av. J.C. à 235 ap. J.C.) (Paris: Payot, 1960), pp. 226-27.



101. Schönberger, "Roman Frontier in Germany," pp. 155-56.
102. *Ibid.*, pp. 156-57.
103. *Strategemata*, I.3.10. On which, see G. Forni in *DE*, vol. 4, fasc. 34, s.v. "Limes," p. 1,080; Frontinus wrote of roads cut into the territory of the Chatti for 120 Roman miles, but it is unclear whether this refers to a frontage, a linear penetration, or a set of separate penetration axes.
104. *Agricola*, 39. Ronald Syme in *CAH* 11: 162-63, takes exception to this negative view, as does Harmand, *L'Occident romain*, pp. 228-29. But cf. Schönberger, "Roman Frontier in Germany," p. 158, who describes the results as poor, viewing the establishment of the Taunus *limes* as the result of an abortive attempt to achieve greater goals; this is connected with his theory (p. 160) that A.D. 89-90 was the great turning point on this frontier, marking the abandonment of the last attempt at large-scale conquest. Troops, including two entire legions, were certainly redeployed to the Danube fronts; see *ibid.* Even so, there was a specific "tactical" reason for Tacitus's revival of the accusation that fake prisoners were produced for a sham triumph: in a slow moving, if relentless, engineering offensive very few prisoners would be taken. Tacitus obviously did not understand that the Roman Army could fight most effectively as a combat engineering force; cf. Frontinus, *Strategemata*, IV.7.2. on Corbulo's statement that wars are won with the *dolabra*, the multipurpose legionary pickax.
105. Schönberger, "Roman Frontier in Germany," pp. 158-59.
106. Tacitus, *Germania*, 29; Ronald Syme, *CAH* 11: 165; Demougeot, *La Formation*, p. 151.
107. Schönberger, "Roman Frontier in Germany," pp. 161-62.
108. *Ibid.*, pp. 168-70. The straight line *limes* from Miltenberg-Ost to Welzheim is thought to be Antonine, but the Schirenhof-Bohming line may have been Hadrianic.
109. *Ibid.*, pp. 174-75.
110. This is the argument of Syme in *CAH* 11: 165.
111. K. Stade, *CAH* 11: 528-29.
112. Except for the short perimeter cutoff across the Dobruja—if it was Domitianic. In any case Trajan's frontier certainly reached to the edge of the Danube delta; see R. P. Longden in *CAH* 11: 233 (The legionary base at Troesmis was less than ten miles south of the Danube bend.)
113. Constantin Daicoviciu, *La Transilvania nell' Antichità* (Bucharest: n.p., 1943), pp. 41-64, and Emilienne Demougeot, *La Formation de l'Europe et les invasions barbares: Des origines germaniques à l'avènement de Dioclétien* (Paris: Anbier, 1969), pp. 156-60.
114. A. Alföldi in *CAH* 11: 84-85.
115. Daicoviciu, *La Transilvania*, pp. 52-54.
116. See John Harmatta, "The Sarmatians in Hungary" in *Studies in the History of the Sarmatians, Magyar-Görög Tanulmányok*, 30 (Budapest: Pázmány Péter Tudományegyetemi Görög Filológiai Intézet, 1950), pp. 45-46.
117. *Histories*, I, 79.
118. Syme *CAH* 11: 168-72; and Demougeot, *La Formation*, pp. 162-64.
119. Syme, *CAH* 11: 175-76, based on fragmentary information (Dio LXVII.7.1).
120. *Ibid.*, p. 176. Demougeot, *La Formation*, pp. 162-64.
121. Syme, *CAH* 11: 176-77. Demougeot, *La Formation*, pp. 162-64.
122. Jérôme Carcopino argues this, under the title "Un retour à l'impérialisme de conquête: L'Or des Daces" (1934), in *Les Etapes de l'impérialisme romain* (Paris: Hachette, 1961), pp. 106-17. See, *contra*, Lepper, *Trajan's Parthian War*, p. 107, in which he describes Trajan's Dacian policy as "Domitianic." The strength of Trajan's army (twelve to thirteen legions) in both wars, shows how powerful a state Decebalus had organized. An economic frontier strategy on that sector was incompatible with the survival of so strong a neighbor. There is also the evidence of Pliny's "Panegyric," which invokes no visions of grandiose conquest ("non times bella nec provocas"). Albino Garzetti, *Problemi dell'Eta Traiana: Sommario e testi* (Genova: Fratelli Bozzi, 1971), pp. 51-52, briefly states the arguments: that Trajan concluded his first Dacian war (A.D. 101-2) with another attempt to convert Dacia into a client state, refraining from conquest; that Decebalus himself provoked the second war (A.D. 105-6) by breaking

- the terms of the treaty of A.D. 102; that the second war was not followed by total conquest, since only Transylvania was provincialized, while the lands on either side were left to the Sarmatians. See the recent survey of the debate in Kenneth Hugh Waters, "The Reign of Trajan and Its Place in Contemporary Scholarship," *ANRW*, pt. 2, vol. 2, pp. 417-22.
123. Szilágyi, "Les Variations," p. 205, estimates the length of the imperial perimeter, including Dacia, at 10,200 kilometers, and without it, at 9,600 kilometers.
124. The *limes* is described in Daicoviciu, *La Transilvania*, pp. 89-99; for an updated account of the Trajanic settlement in Dacia, see *idem*, "Dacia" in *Hommages à Albert Grenier*, ed. Marcel Renard, 3 vols., Collection Latomus, vol. 58 (Brussels: Latomus, 1962), vol. 1, pp. 462-71.
125. For Dacia's role in the overall Danubian strategy, see Vasile Christescu, *Istoria Militară a Daciei Romane* (Bucharest: Fundația Regele Carol I, 1937), pp. 36-42. For a survey of the evidence, see Donald W. Wade, "The Roman Auxiliary Units and Camps in Dacia" (Ph.D. diss., University of North Carolina, 1969).
126. Frova, "The Danubian Limes," pp. 28-29.
127. Lepper, *Trajan's Parthian War*, pp. 109-10. For the subsidization of the Sarmatians, see Colin D. Gordon, "The Subsidization of Border Peoples as a Roman Policy of Imperial Defense" (Ph.D. diss., University of Michigan, 1948), p. 44.
128. Parker, *Roman Legions*, p. 157. On auxiliary units (including *numeri*) see Giovanni Forni, "Contributo alla storia della Dacia Romana," *Athenaeum*, n.s., vol. 36 (1958-59): 3-29 (fasc. 1-2) and 193-218 (fasc. 3), especially 206. See also Christescu, *Istoria Militară*, pp. 42-46 (on troops) and 47-52 (on fortifications).
129. The salient was used this way when the forces of C. Velius Rufus seemingly attacked the *lazyges* in the rear after an advance north of the Danube and west across the river Tisza (Theiss), c.a. A.D. 89; R. P. Longden, *CAH* 11: pp. 176.
130. Numismatic evidence proves that Roman power was successfully maintained in the *Dacia Malvensis* until then (i.e., in Transylvania west of the river Olt); Eugenio Manni, *L'Impero di Gallieno: Contributo alla storia del III secolo* (Rome: Angelo Signorelli, 1949), p. 29.
131. Parker, *Roman Legions*, pp. 133-35.
132. This is the formulation of Garzetti, *Problemi dell'Eta Traiana*, p. 53.
133. J. G. C. Anderson in *CAH* 10: 756-57. See also Magie, *Roman Rule*, pp. 551-53.
134. Until then Cappadocia had been ruled by a procurator supported only by *auxilia*; Parker, *Roman Legions*, p. 134.
135. *Ibid.*, pp. 134-36; Anderson, *CAH* 10: 759-60.
136. There is a detailed account of the first stage of the conflict in Tacitus, *Annals* (XIII-XV); see Kristine Gilmartin, "Corbulo's Campaigns in the East," *Historia* 22 (1973): 583-626.
137. Anderson, *CAH* 10: 765-66.
138. Tacitus, *Annals*, XIII, 37-39.
139. Anderson, *CAH* 10: 768; Magie, *Roman Rule*, p. 558.
140. Magie, *Roman Rule*, pp. 558-60. On the XV *Apollinaris*, see Parker, *Roman Legions*, p. 137.
141. *Nero*, 13. On the diplomatic settlement, see Tacitus, *Annals*, XV, 27-30.
142. See, e.g., Webster, *Roman Imperial Army*, p. 63: "The prodigious efforts, losses and humiliation were all for nothing."
143. Cf. Henderson, *Five Roman Emperors*, p. 60, where the lack of Roman military deployments on the eastern Anatolian borders is called a "grave defect." Where would the legions needed for the job have come from?
144. Parker, *Roman Legions*, pp. 148-49; Syme, *CAH* 11: 141.
145. Lepper, *Trajan's Parthian War*, pp. 110-12. David Oates, *Studies in the Ancient History of Northern Iraq* (London: Oxford University Press for the British Academy, 1968), supports Lepper on the basis of a survey of climate, terrain (pp. 1-5), and strategic considerations (pp. 67-69). Cf. Waters, "The Reign of Trajan," pp. 422-28.
146. This is the major thesis of Lepper, *Trajan's Parthian War*, stated on pp. 112-22. Lepper is mindful of the objections to this thesis; see pp. 126-36; see also the review of M. I. Henderson in *JRS* 39 (1949): 125-26.

147. On the strategic advantages of the Khabur-Jebel Sinjar frontier, see Wheeler, "Mesopotamia," p. 127. On the rainfall levels, see Oates, *Studies in the Ancient History of Northern Iraq*, pp. 1-4 (and map, p. 2).

148. On the background and causes of the war, see R. P. Longden, *CAH* 11: 240; Magie, *Roman Rule*, p. 606 (the glory motive); Julien Guey, *Essai sur la guerre parthique de Trajan (114-117)*, Bibliothèque D "Istros", no. 2 (Bucharest: S. Lambrino, 1937), pp. 32-35; Lepper, *Trajan's Parthian War*, pp. 205-6 (summary), pp. 158-63 (rejects trade-route motive), and pp. 191-204 (critique of glory motive).

149. R. P. Longden, *CAH* 11: 241. In other words, Longden feels that Trajan, whatever his later aberrations, did not come east already in full pursuit of the Alexandrian dream.

150. Ibid. Osroes sent an ambassador to Athens to meet Trajan on his way east; but Trajan also seems to have offered an opening to a peaceful settlement by making himself available at Satala to an invited gathering of client kings from the Caucasus. Parthamasiris could have come to this meeting, but did not; *ibid.*, p. 242. Cf. Guey, *Essai sur la guerre parthique*, pp. 140-41, who argues that Trajan was uninterested in a diplomatic settlement.

151. The sources for Trajan's Parthian war are exceedingly poor, and even the basic chronology is in doubt. R. P. Longden's chronology in *CAH* 11: 858-59 is as follows: A.D. 114, Armenia conquered and Northern Mesopotamia (i.e., north of the Jebel Sinjar line) annexed; 115, southern Mesopotamia and Adiabene annexed; winter 115, fall of Ctesiphon; 116, journey to the Persian Gulf and outbreak of the revolts (see note 152); 117, suppression of the revolt, withdrawal, and death of Trajan (firm date). Lepper's chronology, pp. 31-96, differs: A.D. 114, campaign in Armenia; 115, conquest of northern Mesopotamia and establishment of the putative Khabur-Jebel Sinjar frontier; 116, conquest of Adiabene and fall of Ctesiphon; 117, further conquests across the Tigris (Mesene) and outbreak of the revolt. Lepper exposes the limitations of his own chronology in careful detail. Cf. Henderson's review in *JRS* 39 (1949): 121-25. Guey, *Essai sur la guerre parthique*, p. 107, tabulates his chronology: A.D. 114, conquest of Armenia; September 114 to winter 115, conquest of northern Mesopotamia; spring 116, southern Mesopotamia, Adiabene and Ctesiphon conquered, and visit to the Persian Gulf; winter 116, trans-Tigris conquests, conquest of Babylon; 117, outbreak of the revolts, retreat, and death of Trajan. For attempted reconstructions of the campaigns, on the basis of the very fragmentary sources, see Longden, *CAH* 11: 243-51; Guey, *Essai sur la guerre parthique*, pp. 51-58, 66-77, 110-20, 122-25; and Lepper, *Trajan's Parthian War*, pp. 206-10. Lepper, on pp. 129-31, treats the campaigns of A.D. 116 as spoiling offensives, designed to enhance Roman diplomatic leverage, rather than as attempts at permanent conquest, and those of A.D. 117 as aberrations.

152. R. P. Longden, *CAH* 11: 248, holds that the revolts were triggered by the appearance of a Parthian army in Media; cf. Henderson in *JRS* 39 (1949): 127-28, who stresses that the Parthian counteroffensive is mentioned only by Malalas, a questionable sixth-century source. Lepper, *Trajan's Parthian War*, pp. 151-53, does not reject the possibility, and Guey, *Essai sur la guerre parthique*, pp. 123-25, accepts it. For the revolts themselves, under different chronologies, see Longden, *CAH* 11: 248-50; Lepper, *Trajan's Parthian War*, pp. 88-91; and Guey, *Essai sur la guerre parthique*, pp. 123-25. The role and timing of the Jewish revolts is unclear, as is their extent; see *ibid.*, pp. 126-128 (Guey believes that the Jewish revolts were concurrent with localist revolts in Armenia, Mesopotamia, and Adiabene); Longden, *CAH* 11: 249-51.

153. Weber, in *CAH* 11: 301-2, follows tradition in making a sharp distinction between Trajan's expansionism and Hadrian's pacifism; accordingly, Hadrian is presented as effecting a sharp reversal of policy in making the withdrawal (while also contemplating the evacuation of Dacia). Magie, *Asia Minor*, pp. 609-11, does the same. Lepper, *Trajan's Parthian War*, pp. 212-13, holds that Trajan initiated a limited strategic withdrawal that Hadrian turned—for reasons of his own—into a total withdrawal. Guey, *Essai sur la guerre parthique*, pp. 133, 145-46, views the formation of client states (in A.D. 116-117) as a form of Trajanic withdrawal (cf. Henderson, *JRS* 39 (1949): 126-27). For Hadrian's important role in the campaign, and his own position, see Louis Perret,

"Essai sur la carrière d'Hadrien jusqu'à son avènement à l'empire (76-117)," in *Mémoires de la société nationale des antiquaires de France*, vol. 80, ser. 8, bk. 9 (Paris: G. Klincksieck, 1937).

154. See Dio, LXVIII.17.1, for Trajan's love of glory as the causal factor, and LXVIII.29.1, for his frustration at his inability to emulate Alexander's conquest of India. Quoted and translated in Garzetti, *Problemi dell'Età Traiana*, pp. 59, 62.

155. Magie, *Asia Minor*, pp. 606, 608; Wheeler, *Mesopotamia*, p. 116.

156. Guey, *Essai sur la guerre parthique*, rejects the glory motive (p. 19) but stresses the trade-route motive (pp. 20-22).

157. On the annexation of Nabatean Arabia, see Bowersock, "Arabia Provincia," p. 229. Bowersock points out the significance of the official phraseology, "Arabia adquisita" as opposed to "capta"; in other words, the action was an administrative measure rather than a conquest. For the security arrangements, see *ibid.*, pp. 232-40. For Vespasian's road building, see Syme, *CAH* 11: 130. Cf. Henderson, *JRS* 39 (1949): 128, who rejects the parallel with Flavian policy.

158. Josephus, *The Jewish War*, III.4.2.

159. Parker, *Roman Legions*, p. 138.

160. *Ibid.*, p. 139. With the new legion I Italica, Nero's army comprised twenty-eight legions at this time; thus, counting the four legions in Syria, no less than one quarter of Rome's total legionary force was already engaged in this sector. It is doubtful whether any additional legionary forces could have been redeployed to the sector (e.g., to counter Parthian pressure) without dangerously unbalancing the legionary/auxiliary ratio elsewhere, risking internal civil disorders in less consolidated areas, or exposing frontiers to attack. The system was still highly elastic; but with the provision of the three legions for the Jewish War, this elasticity must have been heavily depleted.

161. Tacitus, *Annals*, XIII.35. This evaluation would not apply to the legion IV *Scythica*, drawn from Moesia. See Parker, *Roman Legions*, pp. 135, 138.

162. Bowersock, "Arabia Provincia," pp. 219-29. On the limits of its usefulness, see Applebaum and Gichon, *Israel and Her Vicinity*, pp. 36-37.

163. Tacitus, *Annals*, XIII.7.

164. *Histories*, II.81.

165. *Ibid.*, V.1.

166. Suetonius, *Nero*, 13; Magie, *Roman Rule*, p. 561.

167. Suetonius, *Vespasianus*, 8; Josephus, *The Jewish War*, VII.7.; Magie, *Roman Rule*, pp. 573-74. On Sophene, see Anderson in *CAH* 10: 758, n. 3.

168. On Agrippa II, see Thérèse Frankfort, "Le Royaume d'Agrippa II et son annexion par Domitien" in *Hommages à Albert Grenier*, vol. 2, pp. 665-66. For the Nabatean state, see Bowersock, "Arabia Provincia," pp. 230-31. For the lesser Syrian states, see M. P. Charlesworth in *CAH* 11: 40.

169. Magie, *Roman Rule*, p. 607, n. 32.

170. See I. A. Richmond, "Palmyra under the Aegis of Rome," *JRS* 53 (1963): 42-43. On the Bosphoran state, see Anderson, *CAH* 10: 265-66.

171. Magie, *Asia Minor*, pp. 569-70. Suetonius, in *Vespasianus* 8, mentions the annexation of Commagene and Cilicia Trachea together with the provincial reorganization of Achea, Lycia, Rhodes, Byzantium, and Samos.

172. George H. Stevenson, *Roman Provincial Administration till the Age of the Antonines* (Oxford: Basil Blackwell, 1939), pp. 50-51.

173. Guey, *Essai sur la guerre parthique*, pp. 145-46; M. Rostovtzeff in *CAH* 11: 119.

174. See Maxime Lemosse, *Le Régime des relations internationales dans le haut-empire romain*, Publications de l'Institut de droit romain de l'Université de Paris, vol. 23 (Paris: Librairie Sirey, 1967), pp. 116-23.

175. Syme in *CAH* 11: 141.

176. Syme in *CAH* 11: 139. For Anatolia, see Magie, *Asia Minor*, pp. 570-73. Also, for the completed system, see Chevallier, *Voies romaines*, p. 161.

177. See Magie, *Asia Minor*, p. 574, p. 576; on Arabia, see Bowersock, "Arabia Provincia," p. 230.

178. Cf. Tacitus, *Annals*, IV.5, with Parker, *Roman Legions*, p. 163: Cappadocia had two legions, Syria three, Judea two, and Arabia one. See also Syme in *CAH* 11: 140-41.

179. Suetonius, *Vesp.* 8; Magie, *Asia Minor*, p. 575 (and n. 24); *ibid.*, p. 575 and n. 24, p. 1,438 (vol. II).

180. This "projection" was not costless in terms of fiscal exactions forgone, however. When Cappadocia was annexed, in A.D. 17, its revenue enabled Tiberius to reduce the auction tax by 50 per cent. Tacitus, *Annals*, II.42. Cf. *ibid.*, I.78.

181. Lemosse, *Relations internationales*, p. 117, n. 250.

182. *Ibid.*, p. 119.

183. Domitian massed a force of nine legions against the Dacians in A.D. 87 (Parker, *Roman Legions*, p. 158), of which one, V *Alaudae*, may have been lost in the fighting; see Watson, *Roman Soldier*, p. 23, n. 43, for an abbreviated discussion of the issue. In his first Dacian war, Trajan had a force of twelve legions on the Danube (Parker, *Roman Legions*, p. 156), and he may have had a total of thirteen for the second war (*ibid.*, p. 157). Cf. Longden, *CAH* 11: 231.

184. *Ibid.*; see also Gordon, "Subsidization of Border Peoples," p. 41.

185. Lemosse, *Relations internationales*, p. 119.

186. I. A. Richmond, "Queen Cartimandua," *JRS* 44 (1954): 43-52; Jarrett and Mann, "Britain from Agricola to Gallienus," pp. 179-83; Eric B. Birley, "The Brigantian Problem and the First Roman Contact with Scotland" in *Roman Britain and the Roman Army*, pp. 31-47. Cf. Steer, "The Antonine Wall: A Reconsideration," p. 36.

187. On the Batavi, see Tacitus, *Germania*, 29; on the Frisii, *ibid.*, 34; on the Tencteri and Usipetes, *ibid.*, 32. See also Harmand, *L'Occident romain*, pp. 224-25, and Demougeot, *Formation*, p. 143.

188. Tacitus, *Historiae*, I.67, with reference to the Helvetii.

189. As implied by the *Vita Hadriani*, of *SHA*, V.6.8; Gordon, "Subsidization of Border Peoples," p. 44.

190. Cf. Syme, *CAH* 11: 186.

191. S. N. Miller in *CAH* 12: 9. Also M. Rostovtzeff, *CAH* 11: 119 and Magie, *Roman Rule*, pp. 685-86.

192. Josephus, *The Jewish War*, trans. H. St. J. Thackeray, Loeb Classical Library, 3 vols. (London and New York: William Heinemann and G. P. Putnam, 1927-1929), III.5.

193. I. A. Richmond, "The Roman Siege-Works of Masada, Israel," *JRS* 52 (1962): 154.

194. For a contrasting view, see Thompson, *Early Germans*, p. 150, on logistics.

195. The perimeter measured 9,600 kilometers (5,962 miles) without Dacia and 10,200 kilometers (6,334 miles) with Dacia; it also had 4,500 kilometers (2,794 miles) of coastline; Szilágyi, "Variations," p. 205.

196. Tacitus, *Annals*, XIII.35, 36.

197. Josephus, *The Jewish War*, II.18.9. Parker, *Roman Legions*, p. 138, interprets the passage as meaning that vexillationes of the IV *Scythica* and VI *Ferrata* were with Cestius Gallus.

198. Josephus, *The Jewish War*, II.19.7. Josephus implies that Cestius Gallus withdrew for no apparent reason. This is unlikely: Gallus was no coward (*ibid.*, II.19.5), nor was he a fool. It may be conjectured that because the legionary troops had proved unsteady, the auxiliaries were affected, and the irregulars melted away.

199. Suetonius, *Vespasianus*, 4.

200. Josephus, *The Jewish War*, II.19.9. Josephus lists the casualties of the infantry and cavalry, but not of the irregulars.

201. Ramsay MacMullen, *Soldier and Civilian in the Later Roman Empire*, Harvard Historical Monographs 52 (Cambridge, Mass.: Harvard University Press, 1963), pp. 77-78.

202. G. Forni, "Estrazione etnica e sociale dei soldati delle legioni . . ." *ANWR*, pt. II, vol. 1, pp. 386-90.

203. Parker, *Roman Legions*, p. 145; Bersanetti, *Vespasiano*, pp. 75-79. See also, Eric B. Birley, "A Note on the Title 'Gemina'," *JRS* 18 (1928): 58.

204. G. E. F. Chilver, "The Army in Politics, A.D. 68-70," *JRS* 47 (1957): 35. Chilver points out that Vespasian did not feel compelled to purchase the loyalty of the army: his donatives were small, and there was no increase in pay.

205. Suetonius, *Domitianus*, 6, 7.

206. *Ibid.*

207. For the rebuilding of legionary bases in stone, see Schönberger, "Roman Frontier in Germany," p. 189 (nos. 38, 51, 21, 32).

208. When the British frontier was advanced, first to Hadrian's line and then to the still more remote Clyde-Forth line, the legions remained at York and Chester, in the deep rear. Legions also remained in Strasbourg, left almost eighty-seven miles behind the Antonine *limes* at its nearest point, Welzheim. But the fortress at Windisch was evacuated when the Lower German garrison was reduced, ca. A.D. 101; Schönberger, "Roman Frontier in Germany," p. 165.

209. R. W. Davies, "The Daily Life of the Roman Soldier under the Principate," *ANWR*, pt. II, vol. 1, p. 332.

210. Jean Baradez, "Les Thermes légionnaires de Gemellae," in *Corolla Memoriae Erich Swoboda Dedicata*, p. 16.

211. On hospitals and their arrangements, see Webster, *Roman Imperial Army*, pp. 195-96, 251, 254.

212. R. W. Davies, "The Medici of the Roman Armed Forces," in *Epigraphische Studien*, no. 8, (1969): 83-99; for standards, see p. 86.

213. R. W. Davies, "Joining the Roman Army," *Bonner Jahrbücher* 169 (1969): 208-13.

214. On basic training, see *ibid.*, pp. 209-10, and Watson, *Roman Soldier*, pp. 54-72. Elaborate training methods were used, such as the construction of practice camps. One of these appears to have been used as an artillery range; see R. W. Davies, "The Romans at Burnswark," *Historia* 21 (1972): 107-8, 110.

215. David Breeze, in "The Organization of the Legion: The First Cohort and the *Equites Legionis*," *JRS* 59 (1969): 50, n. 7, states that more than 154 different types of posts have been counted in the legionary establishment, excluding N.C.O.s in the centuries.

216. Cf. Ronald Syme, "Hadrian the Intellectual," *Empereurs romains d'Espagne*, pp. 243-53.

217. ILS, 2487, trans. Arnold H. M. Jones, in his *History of Rome Through the Fifth Century*, 2 vols. (New York: Harper and Row, 1970), vol. 2, *The Empire*, pp. 154-55.

218. He was, however, described as *armorum peritissimus et rei militaris scientissimus* in the *Vita Hadriani* of *SHA*; cited by Bernard W. Henderson, *The Life and Principate of the Emperor Hadrian* (London: Methuen & Co., 1923), pp. 171. See discussion, pp. 171-77, *contra* Marguardt et al.

219. E.g., Wilhel Weber, in *CAH* 11: 312-13.

220. *Strategemata*, IV.7.4.

221. On legionary pay from Augustus to Severus, see Watson, *Roman Soldier*, pp. 89-92. See also pp. 97-99, on pay of other citizen forces, pp. 102-4 on stoppages.

222. P. Coussin, *Les Armes romaines: Essai sur les origines et l'évolution des armes individuelles du légionnaire romain* (Paris: Librairie Ancienne Honoré Champion, 1926). The tendency was toward heavier and shorter *pila* (pp. 363-69); the replacement of the shorter *gladius*, legionary weapon *par excellence*, with the longer *spatha*, as always used by auxiliaries (p. 371); and the replacement of the heavy cylindrical shield with smaller and flatter shields (pp. 390-95). These tendencies had become general by the end of the period, under the Severi. Coussin sees all these changes in a negative light but does not argue the case.

223. Eric William Marsden, *Greek and Roman Artillery: Historical Development* (Oxford: At the Clarendon Press, 1969), p. 190.

224. Richmond, "Trajan's Army on Trajan's Column," p. 14.

225. This is the general assumption; see, e.g., G. L. Cheesman, *The Auxilia of the Roman Imperial Army* (Oxford: At the Clarendon Press, 1914), p. 168, where a total force of auxiliaries (including *numeri*) is estimated at 220,000, contrasted with c.a. 174,000 legionary troops.

226. Birley, "*Alae* and *Cohortes Milliariae*," pp. 55, 60.

227. The first is the general opinion; the second is that of Forni in "Contributo alla storia della Dacia Romana," p. 25. But the question may be moot; it has been claimed that

the very concept of the "numeri" is not merely artificial but misleading. See Michael P. Speidel, "The Rise of Ethnic Units in the Roman Imperial Army," *ANRW*, pt. 2, vol. 3, pp. 202-31.

228. J. C. Mann, "A Note on the Numeri," *Hermes* 82 (1954): 502.

229. In other words, the men were barbarians: *ibid.*, pp. 505-6. For the *numeri* in general, see Chessman, *Auxilia of Roman Imperial Army*, pp. 85-90; Watson, *Roman Soldier*, p. 16; Webster, *Roman Imperial Army*, pp. 149-50; Syme in *CAH* 11: 132. For units in Britain, see Simpson, *Britons and the Roman Army*, pp. 131-35. Cf. note 227.

230. E.g., Watson, *Roman Soldier*, p. 16; the *élan* is presumably deduced from the war cries, mentioned by Arrian (*Tacita*, 44).

231. Watson, *Roman Soldier*, pp. 99-101. No data seem to be available for the *numeri*, but note the hierarchic pattern: legionary pay was 224 *denarii*; *ala* pay, 200; mounted *cohortes equitatae* pay, 150; and foot auxiliary pay, 100 *denarii*.

232. Troops of the *auxilia* were given the citizenship upon discharge, as had been the case since the time of Claudius; their sons could therefore aspire to legionary careers; A. N. Sherwin-White, *The Roman Citizenship* (Oxford: At the Clarendon Press, 1939), pp. 191-92. Under Antoninus Pius, however, sons born to auxiliaries prior to the grant of citizenship no longer received it with their fathers, and thus had to serve in the *auxilia* themselves in order to qualify; *ibid.*, p. 215.

233. Mann, "A Note on the Numeri," p. 505.

234. See the map (no. 40) opposite p. 216 in Wilhelm Schleiermacher, *Der Römische Limes in Deutschland: Limesführer*, 3d ed. (Berlin: Gebr. Mann Verlag, 1967).

235. Garzetti, *L'Impero da Tiberio agli Antonini*, p. 439.

236. Forni, "Contributo," p. 214.

237. Birley, "*Alae* and *Cohortes Milliariae*," p. 55.

238. Davies, "*Cohortes Equitatae*," p. 752.

239. E.g., Chessman, *Auxilia of the Roman Imperial Army*, p. 29.

240. Davies, "*Cohortes Equitatae*," 754-63 *passim*. Davies argues that the horsemen of the *cohortes equitatae* were true cavalry and not mounted infantry, certainly not low-grade mounted troops. But he fails to draw the necessary distinction between light cavalry, suitable for scouting, "screening" patrols, and so on, and the heavy cavalry trained and equipped for high-intensity warfare; i.e., to charge *en masse* against enemy concentrations mounted or on foot. The cavalry of the *alae* was in fact dual purpose, trained to fight both with missile and shock weapons (the *contus*); the cavalry of the *cohortes equitatae* was only mounted and equipped for close contact and missile attack; as such it was limited-purpose light cavalry.

241. Marguerite Rachet, *Rome et les Berberes: Un problème militaire d'Auguste à Dioclétien*, Collection Latomus, vol. 110 (Brussels: Latomus, 1970), pp. 196-200.

242. Jean Baradez, "L'Enciente de Tipasa: Base d'opérations de troupes venues de Pannonie sous Antonin Le Pieux" in *Quintus Congressus Internationalis Limitis Romani Studiosorum* (Zagreb: Arheoloski Radarii Rasprave III, 1963), pp. 75-77.

243. The evidence is reviewed in Anthony R. Birley, *Marcus Aurelius* (London: Eyre and Spottiswoode, 1966), p. 165.

244. Lucas de Regibus, *La Monarchia Militare di Gallieno* (Recco: Nicoloso da Recco, 1939), p. 108. There is a monographic study of the vexillationes: Robert Saxer, *Untersuchungen zu den vexillationen des römischen Kaiserheeres von Augustus bis Diokletian*, Epigraphische Studien Beihefte der Bonner Jahrbüchen, no. 18 (Cologne and Fraz: Böhlau, 1967).

245. Birley, *Marcus Aurelius*, p. 165. During the winter of A.D. 166/167 the northern frontiers were defended by mobile vexillation forces in anticipation of the return of the forces previously sent to the East. Major penetrations nevertheless took place; see Jenö Fitz, "Reorganisation militaire au début des guerres marcomanes," *Hommages à Marcel Renard*, ed. Jacqueline Bibaw, 3 vols., Collection Latomus, vol. 102. (Brussels: Latomus, 1969), vol. 1, pp. 262-74.

246. ILS 9200, cited by Syme in *CAH* 11: 163.

247. J. C. Mann, "The Raising of New Legions During the Principate," *Hermes* 91 (1963): 485.

### CHAPTER THREE

1. The offense usually must accomplish this reduction because it needs the use of roads that are dominated by the strongholds of the defense, for logistic support.

2. H. M. D. Parker, *The Roman Legions* (Oxford: At the Clarendon Press, 1928), p. 167. On the deployment of the III *Italica* at Regensburg, see H. Schönberger, "The Roman Frontier in Germany: An Archaeological Survey," *JRS* 59 (1969): 172.

3. See Lieut.-Col. Hamilton Tovey, *Elements of Strategy* (London: Eyre & Spottiswoode, 1887), pp. 133-34.

4. Tacitus had singled out the Chatti as an exception among the Germans in that they went to war equipped with provisions; *Germania*, 33. See E. A. Thompson, *The Early Germans* (Oxford: At the Clarendon Press, 1965), pp. 140-49.

5. Mules, horses, and camels can, of course, move as fast or faster than men, but the logistic load was heavy, and *economical* support would require the use of carts pulled by oxen. Oxen require sixteen hours a day for rest and digestion, and are very slow. It has been calculated that a legion at full establishment needed 170 metric tons of wheat per month, and a quinquenary *ala* needed just under 53 tons of barley for its horses; R. W. Davies, "The Daily Life of the Roman Soldier under the Principate," in *ANRW*, pt. II, vol. 1, p. 318.

6. Until quite recently, in southeastern Europe the final segments of highway leading to international borders were frequently left unpaved as a counterinvasion measure. (This was true in Greece and Yugoslavia until well after the Second World War.)

7. For the skills of barbarians, see E. A. Thompson, *A Roman Reformer and Inventor: Being a new text of the treatise De Rebus Bellicis . . .* (Oxford: At the Clarendon Press, 1952), pp. 45-46.

8. For example, the legionary fortress of Eburacum, built ca. 107-8 under Trajan and rebuilt under Septimius Severus had walls only 18 feet high and 5 3/4 feet wide; R. M. Butler, "The Defences of the Fourth Century Fortress at York" in *Soldier and Civilian in Rome Yorkshire* R. M. Butler ed. (Leicester: Leicester University Press, 1971), p. 97. The walls of post-third century fortifications, on the other hand, were generally 10 feet thick; see Harold von Petrikovits, "Fortifications in the North-Western Roman Empire from the Third to the Fifth Centuries A.D.," *JRS* 61 (1971): 197.

9. Von Petrikovits, "Fortifications in North-Western Roman Empire," pp. 194-95.

10. Butler, "Defenses of the Fourth Century Fortress at York," p. 97.

11. Von Petrikovits, "Fortifications in the North-Western Roman Empire," p. 193, attributed a purported improvement in Gothic siege technology to the capture of towns in Greece and Asia Minor. But these cities had been at peace for centuries, and there is no reason to believe that they contained equipment or men trained in siege warfare. Von Petrikovits adds (p. 193) that the Franks and Alamanni "very seldom tried a siege."

12. Thompson, *Early Germans*, pp. 133-34.

13. The sources on this subject are exceedingly poor; see the recent summary in Anthony R. Birley, *Marcus Aurelius* (London: Eyre and Spottiswoode, 1966), pp. 223-45, 283-86, and note 24, below.

14. E.g., Altenstadt; Schönberger, "Roman Frontier in Germany," pp. 171-72.

15. Birley, *Marcus Aurelius*, p. 165, based on S.H.A., *Vita Marci*, XII.13.

16. David Oates, *Studies in the Ancient History of Northern Iraq* (London: Oxford University Press for the British Academy, 1968), pp. 72-73. David Magie, *Roman Rule in Asia Minor to the End of the Third Century after Christ*, 2 vols. (Princeton: Princeton University Press, 1950), vol. 1, pp. 660-63.

17. Émilienne Demougeot, *La Formation de l'Europe et les invasions barbares: Des Origines germaniques à l'avènement de Dioclétien* (Paris: Aubier, 1969), pp. 215-29; J. Fitz, "A Military History of Pannonia from the Marcomann Wars to the Death of Alexander Severus (180-235)," *Acta Archaeologica Academiae Scientiarum Hungaricae* 14 (1962): 32-36; Pavel Oliva, *Pannonia and the Onset of the Crisis in the Roman Empire* (Prague: Československé Akademie Věd, 1962), pp. 260-78.

18. SHA, *Vita Marci*, XXII.1.
19. Giovanni Brusin, "Le Difese della Romana Aquileia e la loro cronologia," *Corolla Memoriae Erich Swoboda Dedicata*, Römische Forschungen in Niederösterreich, 5 (Graz and Cologne: Hermann Bölaus Nachf., 1966), p. 87. Attilio Degraffi, *Il Confine nord-orientale dell'Italia romana: Ricerche storico-topografiche*, Dissertationes Bernenses ser. I. fasc. 6 (Bern: A. Grancke, 1954), p. 113.
20. Oliva, *Pannonia and the Onset of the Crisis*, 96-113; *Vita Marci*, XXI.6-8.
21. Parker, *Roman Legions*, pp. 116-17. See also J. C. Mann, "The Raising of New Legions during the Principate," *Hermes* 91 (1963): 486-89.
22. On the contemporary predominance of *vexillationes* as opposed to complete legions, see P. Romanelli, "L'esercito Romano nella rappresentazione della colonna," in *La Colonna di Marco Aurelio* (Rome: L'Erma di Bretschneider, 1955), p. 65; cf. Parker, *Roman Legions*, p. 168.
23. *Ibid.*, p. 114.
24. Demougeot, *La Formation*, pp. 220-24; Birley, *Marcus Aurelius*, pp. 233-45.
25. Demougeot, *La Formation*, pp. 224-27; Birley, *Marcus Aurelius*, pp. 272-86, *passim*.
26. See Oliva, *Pannonia and the Onset of the Crisis*, pp. 299-304. This contradicts sources as cited, including SHA, *Vita Marci*, XXIV.5; cf. Wilhelm Weber in *CAH* 11: 355, 362.
27. Demougeot, *La Formation*, p. 216, citing Dio, XLII.3.1; Weber, *CAH* 11: 352, amends this to read 6,000 survivors of a larger initial force.
28. Demougeot, *La Formation*, p. 395. On Gothic attacks in general, see *ibid.*, pp. 393-433, and John B. Bury, *The Invasion of Europe by the Barbarians* (1928); reprinted, (New York: Russel and Russel, 1963), pp. 3-22.
29. Schönberger, "Roman Frontier in Germany," pp. 176-77.
30. Demougeot, *La Formation*, pp. 521-32; Schönberger, "Roman Frontier in Germany," pp. 177-79.
31. Shappard S. Frere, *Britannia: A History of Roman Britain* (London: Routledge and Kegan Paul, 1967), pp. 188-89.
32. Demougeot, *La Formation*, pp. 419-28; A. Alföldi, *CAH* 11: pp. 147-50; Chester G. Starr, Jr., *The Roman Imperial Navy 31 B.C.-A.D. 324*, Cornell Studies in Classical Philology, vol. 26 (Ithaca: Cornell University Press, 1941), pp. 194-96.
33. Demougeot, *La Formation*, p. 419.
34. A. Alföldi, *CAH* 11: 148-49.
35. Fergus Millar, "P. Herennius Dexippus: The Greek World and the Third-Century Invasions" *JRS* 59 (1969): 26-27.
36. Homer A. Thompson, "Athenian Twilight: A.D. 267-600," *JRS* 49 (1959): 61-65.
37. This figure does not include insular and peninsular shorelines.
38. Frere, *Britannia*, pp. 188-89, 338 *passim*. On the *comes* and his command, see *ibid.*, pp. 212, 229.
39. SHA, *Vita Claudii*, VIII.1 and VI.4.
40. A. Alföldi, *CAH* 12: 149. Bury, *The Invasions of Europe*, p. 22, merely remarks that the figures are grossly exaggerated.
41. See Arthur Christensen, *L'Iran sous les Sassanides*, 2d ed. (Copenhagen: Ejnar Munksgaard, 1944), pp. 84-96.
42. Oates, *Studies in the Ancient History of Northern Iraq*, p. 93; S. N. Miller, *CAH* 12: 16-17; Maurice Besnier, *L'Empire romain de l'avènement des Sévères au concile de Nicée*, *Histoire ancienne*, pt. 3; *Histoire romaine*, vol. 4 (Paris: Presses universitaires de France, 1937), pp. 24-25.
43. Christensen, *L'Iran sous les Sassanides*, pp. 97-98.
44. *Ibid.*, p. 220.
45. *Ibid.*, pp. 207-12.
46. Magie, *Roman Rule in Asia Minor*, pp. 695-96; Oates, *Studies in the Ancient History of Northern Iraq*, p. 74; Besnier, *L'Empire romain de l'avènement des Sévères*, pp. 105-7.
47. W. Esslin, *CAH* 12: 86-88; Christensen, *L'Iran sous les Sassanides*, pp. 130-31.
48. Besnier, *L'Empire romain de l'avènement des Sévères*, pp. 151, 153, 177-78.

49. See William Seston, *Dioclétien et la tétrarchie: Guerres et Réformes*, Bibliothèque des écoles françaises d'Athènes et de Rome, fasc. 162 (Paris: E. de Boccard, 1946), pp. 159-72. On the treaty of A.D. 298, see *ibid.*, pp. 172-74. Cf. Ernst Stein, *Histoire du Bas-Empire: De l'état romain à l'état byzantin*, ed. and trans. Jean-Remy Palanque, 2 vols. (Paris and The Hague: Desclée de Brouwer, 1959), vol. 1, pt. 1, pp. 79-80, where the date is given as A.D. 297. On the treaty of A.D. 363, see *ibid.*, p. 171.
50. Schönberger, "Roman Frontier in Germany," p. 175, describes the attacks as "a decisive point in the history of Upper Germany and Raetia."
51. *Ibid.*, p. 176.
52. On the Carpi, see Demougeot, *La Formation*, pp. 437-39. On the Goths in general, see the recent summary in Lucien Musset, *Les Invasions: Les vagues germaniques*, *Nouvelle Clío* no. 12 (Paris: Presses universitaires de France, 1965), pp. 80-82. On the sequence of events, see Demougeot, *La Formation*, pp. 409-11.
53. Demougeot, *La Formation*, p. 412.
54. On Dacia, see *ibid.*, pp. 434-42; on Gothic victories and raids after 250, see *ibid.*, pp. 416-25; on the emergence of the Frankish federation and its attacks until c.a. 260, see *ibid.*, pp. 465-89 *passim*; on Shapur's threat to eastern Anatolia, see Besnier, *L'Empire romain de l'avènement des Sévères*, p. 178.
55. Demougeot, *La Formation*, p. 466.
56. Seston, *Dioclétien et la tétrarchie*, pp. 173-74. Cf. map, A.D. 309, in Stein, *Histoire du Bas-Empire*, vol. 1 book 2.
57. Cf. John C. Mann, "The Frontiers of the Principate," *ANWR* 2, vol. 1, pp. 524-25; his thesis is here controverted in *extenso* (chap. II).
58. The loss of Dacia was progressive, with the earlier abandonment of the Severan *Limes Transalpinus*. See Demougeot, *La Formation*, pp. 434-42, 452-57; and C. Daicoviciu, *La Transylvanie dans l'antiquité* (Bucharest: n.p., 1945), pp. 165-87. On the responsibility for the loss, see Eugenio Manni, *L'Impero di Gallieno: Contributo alla storia del III Secolo* (Rome: Angelo Signorelli, 1949), pp. 26-31, where each phase is distinguished.
59. Schönberger, "Roman Frontier in Germany," pp. 176-77.
60. Mann, "Frontiers of the Principate," p. 529.
61. Jean Lesquier, *L'Armée romaine d'Égypte d'Auguste à Dioclétien* (Cairo: Institut français d'archéologie orientale, 1918), pp. 474-77.
62. E. A. Thompson, *The Visigoths in the Time of Ulfila* (Oxford: At the Clarendon Press, 1966), pp. 3-6.
63. Under Constantine, who resumed an aggressive strategy of forward defense, a bridge across the Danube was built in 328 to provide access into the Olt valley. This trans-Danubian bridgehead was used, as Dacia as a whole had been used, as a base for lateral attacks. In 332, the Visigoths (then attacking the client Sarmatians in the Banat) were taken in the flank by a Roman force coming from the Olt valley and suffered a shattering defeat; see Thompson, *Visigoths*, pp. 10-12; on the strategy, see Stein, *Histoire du Bas-Empire*, pp. 128-29.
64. Marguerite Rachet, *Rome et les Berbères: Un problème militaire d'Auguste à Dioclétien*, Collection Latomus, vol. 110 (Brussels: Latomus, 1970), pp. 238-50; 252-54.
65. Seston, *Dioclétien*, p. 119, n. 1.
66. *Ibid.*, pp. 117-20; Rachet, *Rome et les Berbères*, pp. 254-56.
67. Brian H. Warmington, *The North African Provinces from Diocletian to the Vandal Conquest* (Cambridge: Cambridge University Press, 1954), p. 8, for a brief overview; on the background, see Seston, *Dioclétien*, pp. 116-17.
68. See Rachet, *Rome et les Berbères*, p. 258; Maurice Euzennat, "Le Limes de Volubilis" in *Studien zu den Militärgrenzen Roms: Vorträge des 6 Internationalen Limes Kongress in Süddeutschland* (Cologne-Graz: Böhlau Verlag, 1967), pp. 198-99.
69. Lesquier, *L'Armée romaine d'Égypte*, pp. 474-77; Seston, *Dioclétien*, p. 158.
70. Seston, *Dioclétien*, pp. 168-74; Stein, *Histoire du Bas-Empire*, p. 80.
71. Mordechai Gichon, "The Negev Frontier," in Shimon Applebaum and Mordechai Gichon, *Israel and Her Vicinity in the Roman and Byzantine Periods* (Tel Aviv: Tel Aviv University Press, 1967), pp. 49-50.

72. Ibid., p. 52.  
 73. Ibid., pp. 52-54.  
 74. Davies, "Daily Life of the Roman Soldier," p. 326; Von Petrikovits, "Fortifications in the North-Western Roman Empire," p. 188.  
 75. Schönberger, "Roman Frontier in Germany," p. 178; J. Mertens and C. Leva, "Le Fortin de Braives et le Limes Belgicus" in R. Chevallier, ed., *Mélanges d'archéologie et d'histoire offerts à André Piganiol*, École Pratique des Hautes Études VI<sup>e</sup> Section Centre de Recherches Historiques, 3 vols. (Paris: S.E.V.P.E.N., 1966), vol. 2, pp. 1063-74. The Cologne-Bavay road was not of course a *limes* in itself, for the frontier remained on the lower Rhine.  
 76. Von Petrikovits, "Fortifications in the North-Western Roman Empire," p. 188.  
 77. Ibid., p. 189.  
 78. Demougeot, *La Formation*, p. 497. There were also sea raids, however.  
 79. Ibid., p. 498.  
 80. The numbers given in the sources, 100,000 Alamanni versus 10,000 Romans, are almost certainly grossly exaggerated, but the food-gathering and loot-seeking dynamics of these raids would automatically lead to dispersion in the countryside and concentrations around target cities. See Besnier, *L'Empire romain de l'avènement des Sévères*, pp. 180-81, n. 234.  
 81. Clifford E. Minor, "Brigand, Insurrectionist and Separatist Movements in the Later Roman Empire" (Ph.D. diss., University of Washington, 1971), pp. 118-22.  
 82. Petrikovits, "Fortifications in the North-Western Roman Empire," p. 193.  
 83. Seston, *Dioclétien*, pp. 178-79; and map, opposite p. 374; but cf. map 1, opposite p. 130, in Denis van Berchem, *L'Armée de Dioclétien et la réforme Constantinienne*, Institut français d'archéologie de Beyrouth, Bibliothèque archéologique et historique 56 (Paris: Librairie orientaliste Paul Geuthner, 1952).  
 84. Von Petrikovits, "Fortifications in the North-Western Roman Empire," pp. 193-95.  
 85. Ibid., pp. 195-96.  
 86. This was the case of Dinogetia-Garvân in Scythia; see Emil Condurachi, "Neue Probleme und Ergebnisse der Limes-forschung in Scythia Minor," *Studien zu den Militärgrenzen Roms*, pp. 165-66.  
 87. Von Petrikovits, "Fortifications in the North-Western Roman Empire," p. 197.  
 88. Ammianus Marcellinus (XX.6.5) writes of an *aries robustissimus* at the siege of Singara in A.D. 359; earlier, ironclad towers, firing platforms for artillery, had been unsuccessfully used by the forces of Shapur II at the siege of Amida. In any case, even the northern barbarians were not devoid of technical inventiveness; see Thompson, *Roman Reformer and Inventor*, pp. 44-50. Systematic siege technology, however, is another matter.  
 89. Von Petrikovits, "Fortifications in the North-Western Roman Empire," p. 197. This is a commonplace; see, e.g., the legionary fortresses at Strasbourg and the Constantinian fortress at Divitia (Deutz) opposite Cologne; Franz Oelmann, "The Rhine Limes in Late Roman Times," in [Third] *Congress of Roman Frontier Studies*, 1949, ed. Eric Birley (Durham: Durham University Registrar, 1952), pp. 87, 95. But in Britain and elsewhere thin-walled structures remained in service (Frere, *Britannia*, pp. 342-59). And for a specific case, see Butler, "Defences of the Fourth Century Fortress at York," p. 97.  
 90. As in the case of the Rhine auxiliary fort at Remagen, where the existing structure dating from the principate was reconditioned in A.D. 275; Von Petrikovits, "Fortifications in the North-Western Roman Empire," p. 197. There is a graphic illustration of the process of successive changes in design in Radu Florescu, "Le Phases de construction du castrum Drobeta (Turnu Severin)," in *Studien zu den Militärgrenzen Roms*, pp. 144-51.  
 91. I. A. Richmond, *The City-Wall of Imperial Rome* . . . (Oxford: At the Clarendon Press, 1930), p. 243; Richmond calculated that the full complement of artillery would amount to 762 pieces (for 381 towers); Philip Corder, "The Reorganization of the

- Defences of Romano-British Towns in the Fourth Century," *Archaeological Journal* 112 (1955): 34-35.  
 92. E. W. Marsden, *Greek and Roman Artillery: Historical Development*, 2 vols. (Oxford: At the Clarendon Press, 1969), 195-96.  
 93. Richmond, *City-Wall of Imperial Rome*, pp. 79-80; Corder, "Reorganization," pp. 34-36 (diagram). Under favorable conditions, the artillery could compensate for inadequate manpower, and this was an important consideration; see Thompson, *Roman Reformer and Inventor*, p. 49, on the author of the tract advocating a labor-saving weapon of his own design, described as a *ballista fulminalis*.  
 94. Von Petrikovits, "Fortifications in the North-Western Roman Empire," p. 197. The same technique was used in the twentieth-century police fortresses built in Palestine and India by the British.  
 95. R. Laur-Belart, "The Late Limes from Basel to the Lake of Constance," [Third] *Congress of Roman Frontier Studies*, 1949, p. 57; Florescu, "Le Phases de construction du castrum Drobeta," pp. 144-51; Oelmann, "The Rhine Limes," p. 87.  
 96. Von Petrikovits, "Fortifications in the North-Western Roman Empire," pp. 198-99. The Diocletianic *quadriburgium* had four square towers, in a pattern that varied little from province to province; Gichon, "The Negev Frontier," p. 52.  
 97. Petrikovits, "Fortifications in the North-Western Roman Empire," pp. 199-201.  
 98. Ibid., pp. 201-3; Schönberger, "Roman Frontier in Germany," p. 182; Laur-Belart, "Late Limes from Basel to Lake Constance," p. 58. Cf. Gichon, "The Origins of the Limes Palestinae and the Major Phases of Its Development," in *Studien zu den Militärgrenzen Roms*, pp. 180-81.  
 99. Schönberger, "Roman Frontier in Germany," p. 187, n. 346.  
 100. Some troops may have declined into parttime militias, but that is a very different thing from a *country-wide* system. There were exceptions: for example, *Collegia Iuventutis* may have manned road-forts; see Schönberger, "Roman Frontier in Germany," p. 178. The imperial authorities were reluctant to authorize the formation of voluntary militias (or even fire brigades). See Dio's third-century views, as reflected in the speech of Maecenas, translated in A. H. M. Jones, ed., *A History of Rome Through the Fifth Century*, 2 vols. (New York: Harper & Row, 1970) vol. 2, p. 58.  
 101. Marcianopolis and Philippopolis resisted Cniva successfully; so did Salonika in A.D. 256 and many other cities later.  
 102. E.g., the ancient walls of Aquileia, demolished by the late second century to accommodate the growth of the city; Brusin, "Le Difese della Romana Aquileia," p. 87.  
 103. R. M. Butler, "Late Roman Town Walls in Gaul," *Archaeological Journal* 116 (1959): 26; see his list of pre-third-century walled towns.  
 104. Ibid.; Von Petrikovits, "Fortifications in the North-Western Roman Empire," p. 189.  
 105. Butler, "Late Roman Town Walls in Gaul," p. 26.  
 106. See Demougeot, *La Formation*, pp. 485-88, on the Alamannic attack of A.D. 254; pp. 488-90 on the Frankish attacks; pp. 496-98 on the incursions of A.D. 259-60.  
 107. Butler, "Late Roman Town Walls in Gaul," p. 40. But some fairly large cities remained, e.g., Toulouse, whose 3,000 meters of enceinte enclosed 90 hectares; Michel Labrousse, "Recherches et hypothèses sur l'enceinte romaine de Toulouse," in *Hommages à Albert Grenier*, ed. Marcel Renard, vol. I, p. 925.  
 108. Homer A. Thompson, "Athenian Twilight," p. 63.  
 109. Butler, "Late Roman Town Walls in Gaul," p. 40.  
 110. Laur-Belart, "Limes from Basel to the Lake of Constance," p. 56.  
 111. Schönberger, "Roman Frontier in Germany," p. 178, n. 286.  
 112. Von Petrikovits, "Fortifications in the North-Western Roman Empire," n. 30 p. 192.  
 113. Renato Bartolucci, "Il porto di Leptis Magna nella sua vita economica e sociale," in *Hommages à Albert Grenier*, ed. Michel Renard, vol. 1, pp. 241-43.  
 114. Cf. Ramsay MacMullen, *Soldier and Civilian in the Later Roman Empire*, Harvard Historical Monographs 52 (Cambridge, Mass.: Harvard University Press, 1963), pp. 79-80.



115. R. G. Goodchild and J. B. Ward-Perkins, "The Limes Tripolitanus in the Light of Recent Discoveries," *JRS* 39 (1949): 84.

116. Von Petrikovits, "Fortifications in the North-Western Roman Empire," p. 191. Its purpose is irrelevant—it could be done.

117. MacMullen, *Soldier and Civilian*, pp. 138-51.

118. Van Berchem, *L'Armée de Dioclétien*, pp. 19-24, argues that the *limitanei* were generally the former *alae* and *cohortes* in a new and more localized guise, and dismisses the evidence of *SHA Severus Alexander*, 58.4, as being an anachronistic transposition of fourth-century notions. In so doing, he reflects a traditional view, maintained by Stein, *Histoire du Bas-Empire*, p. 62, among others. W. Seston, in "Du *comitatus* de Dioclétien aux *comitatenses* de Constantin," *Historia* 4 (1955): 289, argues that the farmer-soldiers were not *alares* and *cohortales* transformed, but were rather barbarians enrolled for local, parttime military service (*gentiles*); MacMullen, *Soldier and Civilian*, on the other hand, questions the rejection of the *SHA Severus Alexander* as evidence (p. 13, n. 34). A. H. M. Jones, *The Later Roman Empire* (284-602: A social and administrative survey, 3 vols. (Oxford: Basil Blackwell, 1964), vol. 2, p. 649, concurs with Van Berchem's rejection of the early dating but stresses the evidence from North Africa where the militia were *gentiles*, while static troops, i.e., *limitanei* proper (ex-*alares* and *cohortales*), remained full-time garrison troops (pp. 650, 652-53). See also Guido Clemente, *La "Notitia Dignitatum," Saggi di storia e letteratura*, no. 4 (Cagliari: Editrice Sarda Fossataro, 1968), pp. 319-42.

119. Jones, *Later Roman Empire*, p. 649, insists on the military status of the *limitanei* proper (as opposed to barbarian farmer-soldiers), and hence on their likely efficiency, subject to contrary proof. Jones and others point out that full rations in kind were supplied to them all year until A.D. 364 and thereafter for nine months a year, which shows, he says (p. 651), that they did not grow their own food (and drilled instead?). Earlier, Santo Mazzarino, *Aspetti Sociali del Quarto Secolo: Ricerche di storia tardo-romana* (Rome: L'Erma di Bretschneider, 1951), pp. 314-30 and *passim*, had argued that only in Africa were the *limitanei* peasants. For the more widespread view that the *limitanei*, whatever their origins, were a degraded peasant militia, see MacMullen, *Soldier and Civilian*, pp. 1-22 and 151-53.

120. *SHA Severus Alexander* cannot be accepted as evidence. "It is completely worthless and has no support whatever in our substantial evidence from the Severan period." [J. F. G.]

121. The *limitanei* were front-line defenders, even if both groups coexisted, as they seem to have done in the case of North Africa, at least; Jones, *Later Roman Empire*, p. 643. Cf. Van Berchem, *L'Armée de Dioclétien*, pp. 37-49.

122. Cf. MacMullen, *Soldier and Civilian*, pp. 155-56. Both Eric B. Birley, "Septimius Severus and the Roman Army," *Epigraphische Studien*, no. 8 (1969): 63-82, and R. E. Smith, "The Army Reforms of Septimius Severus," *Historia* 12 (1972): 489-500, argue against the tradition of the narrative sources, which is maintained by some modern historians; in their view, the pay increases, the permission given soldiers to cultivate the legionary lands, and all other privileges (gold ring, clubs, etc.) were intended to improve recruitment and to raise morale, not to bribe the army to support the dynasty.

123. Van Berchem, *L'Armée de Dioclétien*, pp. 21-24, followed in part by Jones, *Later Roman Empire*, vol. 2, p. 608, and formalized by Roger Rémondon, *La Crise de l'empire romain de Marc-Aurèle à Anastase*, Nouvelle Clio, no. 11 (Paris: Presses universitaires de France, 1964), diagram, p. 126.

124. Seston, "Du *Comitatus* de Dioclétien," pp. 285-88. In any case, Van Berchem sees the *dux limitis* as becoming a purely territorial commander, in charge of *limes* and *limitanei*, in the wake of the Constantinian reforms; see *L'Armée de Dioclétien*, pp. 100-1.

125. Van Berchem, *L'Armée de Dioclétien*, pp. 100-2.

126. MacMullen, *Soldier and Civilian*, p. 153.

127. *Ibid.*; paraphrased but reversed. Based on Goodchild and Ward-Perkins, "The *limes Tripolitanus*," pp. 94-95. They resisted until 363 at least, and on their own.

128. *Ibid.*, p. 43, citing a Theodosian constitution [*Cod. Theod.* VII, 15, 1].

129. Jones, *Later Roman Empire*, vol. 1, p. 274; vol. 2, p. 663, based on *Cod. Just.* I.xxvii.2 (vol. 3, p. 205, n. 130).

130. Schönberger, "Roman Frontier in Germany," p. 187.

131. Van Berchem, *L'Armée de Dioclétien*, pp. 91-92. For example the V *Macedonica* and XIII *Gemina* along the Danube in Dacia Ripensis and Upper Moesia were divided into five and four detachments, respectively, and the division had a permanent character, each detachment coming under the command of a separate *praefectus legionis* (*Ibid.*, p. 93). The evidence dates from the *Notitia Dignitatum*, but in Van Berchem's "stratigraphic" analysis it is given a Constantinian dating.

132. These are the generally accepted figures; see Clemente, *La "Notitia Dignitatum,"* pp. 146-51, where the authoritative views are stated. But it also has been suggested that the *auxilia* were smaller (300 men), while the *cunei* were much larger (1,200 men); L. Várady, "New evidences on some problems of Late Roman military organization," *Acta Antiqua Academiae Scientiarum Hungaricae* 9 (1961): 360, and also as cited in Clemente, *La "Notitia Dignitatum,"* p. 151, n. 58.

133. Van Berchem, *L'Armée de Dioclétien*, pp. 85, 89, 101. Van Berchem distinguishes between the *limitanei* proper and the *ripenses*, a category that now comprised the provincial forces.

134. "Le legioni di frontiera avevano assunto tutti i peggiori atteggiamenti degli imboscati d'ogni tempo . . . Vicini al nemico senza combatterlo, sedentari, oziosi, politicanti. . . ." This is said of the third-century legions prior to the reforms of Gallienus; Luca de Regibus, *La Monarchia Militare di Gallieno* (Recco: Nicoloso da Recco, 1939), p. 63.

135. For the Severan list, see Jones, *Later Roman Empire*, vol. 3, table 9, pp. 368-74. The last mention of VI *Ferrata* is in Dio, LV.23; cited in Léon P. Homo, *Essai sur le règne de l'empereur Aurélien* (270-275), Bibliothèque des écoles françaises d'Athènes et de Rome, fasc. 89 (Paris: Albert Fontemoing, 1904), p. 201, n. 9; the III *Parthica* is not listed in the *Notitia*, but internal evidence suggests that this may have been due to a clerical error; *ibid.*, n. 2. The *Notitia* lists for the Rhine have been lost, but only one of the Rhine legions, the XXII *Primigenia*, is totally unattested in contingents of the field forces, as are I *Minervia* (*Minervii* or ix.37), XXX *Ulpia* (*Truncensimani* occ.vii.108), and VIII *Augusta* (*Octaviani* occ.vii.28), and the XXII *Primigenia* is mentioned in the coins of Carausius in the Tetrarchic period; *ibid.*, p. 202, n. 1. The only other legion not recorded in the *Notitia*, the XX *Valeria Victrix*, is also last mentioned in the coinage of Carausius; *ibid.*, p. 203, n. 2. On the III *Augusta*, disbanded after 238 and reconstituted in 253, see René Cagnat, *L'Armée romaine d'Afrique et l'occupation militaire de l'Afrique sous les empereurs* (Paris: Ernest Leroux, 1913), pp. 159-61. Forty-four legions are listed in the *Notitia* as *limitanei* (meaning territorial forces) of which twenty-nine were in the East (on the Libya-Dacia circuit) and fifteen in the West; this excludes four detachments of legions also listed elsewhere as well as four detachments of Egyptian legions listed twice. In the eastern field army (*comitatus*) there are thirteen higher-grade palatine legions and thirty-eight regular field legions (*comitatenses*) as well as twenty transferred border legions (*pseudocomitatenses*); in the western field army, there are twelve palatine legions and thirty-three regular legions, as well as twenty-eight *pseudocomitatenses*. The grand total comes to 188 legions, which would be equivalent to 1,128,000 men under the old level of legionary unit manpower, a totally impossible number; Jones, *Later Roman Empire*, vol. 3, table 15, pp. 379-80.

136. Jones, *Later Roman Empire*, vol. 2, pp. 681-82. See Clemente, "Notitia Dignitatum," pp. 146-56, on the question of unit numbers. There is some circumstantial archaeological evidence that the tetrarchic centuries were reduced to sixty men; E. B. Birley, "Hadrian's Wall and Its Neighbourhood" in *Studien zu den militärgrenzen roms*, p. 7.

137. Vegetius, I.20, 21. See François Paschoud, *Roma Aeterna: Études sur le patriotisme dans l'occident latin à l'époque des grandes invasions*, Bibliotheca Helvetica Romana, no. 7 (Rome: Institut Suisse de Rome, 1967), pp. 110-18.

138. Marsden, *Greek and Roman Artillery*, p. 195. There were separate legions instead, it seems; p. 196. The implication of Ammianus Marcellinus, XIX.5.2, is that normal legions were no longer trained to handle artillery or to build fortifications.

139. Paul Coussin, *Les Armes romaines: Essai sur les origines et l'évolution des armes individuelles du légionnaire romain* (Paris: Librairie Ancienne Honoré Champion, 1926), pp. 480-92.



140. Van Berchem, *L'Armée de Dioclétien*, p. 52; Von Petrikovits, "Fortifications in the North-Western Roman Empire," p. 181. The policy was continued by Constantine; see *ibid.*, p. 182, and Thompson, *Visigoths in the Time of Ulfila*, pp. 10-12.
141. Paneg. Lat. IX, 18, 4, as cited in Van Berchem, *L'Armée de Dioclétien*, p. 89. For Malalas, see *ibid.*, p. 17.
142. Lactantius naturally preferred to denounce his "building mania"; *De mortibus persecutorum*, 7. On Diocletian's personal role, see Seston, *Dioclétien et la tétrarchie*, pp. 297-98.
143. *Ibid.*, pp. 177-78; cf. Van Berchem, *L'Armée de Dioclétien*, pp. 3-6.
144. *Ibid.*, pp. 26-27, and map, following p. 130.
145. Seston, *Dioclétien et la tétrarchie*, pp. 131-32.
146. Van Berchem, *L'Armée de Dioclétien*, pp. 69-71.
147. Except for a single *numerus barcariorum* in Raetia, the only *numeri* surviving in the *Notitia* were ten units on Hadrian's Wall and another four under the *Comes Litoris Saxonici*, in charge of British coast defenses; eventually the term *numeri* become generic, but perhaps in tetrarchic times it still distinguished an ethnic unit. *Ibid.*, pp. 57-58.
148. Jones, *Later Roman Empire*, vol. 1, p. 56.
149. This transformation is a large subject: see the summaries in Jones, *Later Roman Empire*, pp. 61-68; Seston, *Dioclétien et la tétrarchie*, pp. 261-94, and Denis van Berchem, "L'Annone militaire dans l'empire romain au III<sup>e</sup> siècle," *Mémoires de la société nationale des antiquaires de France*, vol. 80, ser. 8, bk. 10 (Paris: G. Klincksieck, 1937).
150. He granted the right to marry, surely a case of *ex post facto* recognition, raised pay (for the first time since Domitian) from 300 to 450 *denarii*, allowed the formation of social clubs, and facilitated promotions (the gold rings); Smith, "Army Reforms of Septimius Severus," pp. 492-96, and Birley, "Septimius Severus and the Roman Army," pp. 63-65.
151. See the preamble to the celebrated edict on prices translated in Jones, *History of Rome*, vol. 2, pp. 308-12. "Sometimes the single purchase of a soldier deprives him of his bonus and salary."
152. This figure includes the uncertain IV *Italica* supposedly raised by Alexander Severus; Mann, "The Raising of New Legions during the Principate," p. 484.
153. Rather schematically, E. Nischer, "The Army Reforms of Diocletian and Constantine and Their Modifications up to the Time of the *Notitia Dignitatum*," *JRS* 13 (1923): 1-55, had estimated a 100 percent increase in the legionary force, from thirty-four to sixty-eight units; for this he was criticized in detail by H. M. D. Parker, "The Legions of Diocletian and Constantine," *JRS* 23, pt. 2 (1933): 177-80. However, Besnier, *L'Empire romain de l'avènement des Sévères*, p. 304 and nn. 160, 164, endorsed Nischer's figure, and Jones, *Later Roman Empire*, vol. 1, pp. 59-60, arrives at the same result.
154. Parker, "The Legions of Diocletian and Constantine," p. 80.
155. Van Berchem, *L'Armée de Dioclétien*, pp. 15-17 and map, opposite p. 130.
156. *Ibid.*, pp. 24-26.
157. Jones, *Later Roman Empire*, vol. 1, p. 57.
158. Van Berchem, *L'Armée de Dioclétien*, pp. 90-93, endorsed by Jones, *Later Roman Empire*, vol. 1, p. 99.
159. Van Berchem, *L'Armée de Dioclétien*, pp. 90-91.
160. On the *cunei* and *auxilia* at the time of Constantine, see Jones, *Later Roman Empire*, vol. 1, pp. 99-100.
161. Van Berchem, *L'Armée de Dioclétien*, p. 85.
162. *Ibid.*, pp. 101-2.
163. If an inference can be drawn from a constitution of 372, *Cod. Theod.* VII, 22, 8 (372) as cited; *ibid.*, p. 102, n. 1.
164. Zosimus charged that he had done so; Jones, *Later Roman Empire*, vol. 2, p. 609.
165. Van Berchem, *L'Armée de Dioclétien*, p. 93.
166. Jones, *Later Roman Empire*, vol. 3, table 12, p. 378.
167. L. Várady, "Additional Notes on the Problem of Late-Roman Dalmatian *Cunei*," *Acta Antiqua Academiae Scientiarum Hungaricae* 11 (1963): 391-406.

168. Clemente, "*Notitia Dignitatum*," p. 299, reproduces the list.
169. André Alföldi, "La Grande Crise du monde romain au III<sup>e</sup> siècle," *L'Antiquité Classique* 7 (1938): 7.
170. Richard I. Frank, *Scholae Palatinae: The Palace Guards of the Later Roman Empire*, Papers and Monographs of the American Academy in Rome, vol. 23 (Rome: American Academy in Rome, 1969), pp. 17-26.
171. M. Speidel, *Die Equites Singulares Augusti* (Bonn, 1965).
172. Stein, *Histoire du Bas-Empire*, vol. 1, pp. 57-58. Jones *Later Roman Empire*, vol. 1, pp. 53-54; vol. 2, pp. 636-40. Frank, *Scholae Palatinae*, pp. 33-41.
173. Frank, *Scholae Palatinae*, pp. 47-49. Cf. Jones, *Later Roman Empire*, vol. 2, p. 613. The *Scholae* were actually under the Master of Offices, but the latter would be an administrative supervisor, and not an operational commander; *ibid.*
174. *Ibid.*, pp. 52-53.
175. On these beginnings, see Marcel Durry, *Les Cohortes Prétoriennes*. Bibliothèque des écoles françaises d'Athènes et de Rome, fasc. 146 (Paris: E. de Boccard, 1938), and Alfredo Passerini, *Le Coorti Pretorie* (1939); rpt. ed. (Rome: Centro Editoriale Internazionale, 1969), pp. 1-53, for origins and early history.
176. *Ibid.*, p. 44.
177. *Annals*, IV.5; Passerini, *Coorti Pretorie*, p. 53.
178. *Ibid.*, pp. 54-55, 61.
179. On the *Vigiles*, see P. K. B. Reynolds, *The Vigiles of Ancient Rome* (Oxford: At the Clarendon Press, 1926).
180. Mann, "Raising of New Legions" (n. 27); Birley, *Marcus Aurelius*, p. 217.
181. Smith, "Army Reforms of Septimius Severus," p. 486, n. 28.
182. *Ibid.*, n. 1, for detailed citations of ancients, and n. 33 (p. 487) for some moderns.
183. These numerical comparisons are summarized in Durry, *Les Cohortes Prétoriennes*, pp. 81-87, and table, p. 89, n. 4.
184. Birley, "Septimius Severus and the Roman Army," p. 65.
185. Maurice Platnauer, *The Life and Reign of the Emperor Lucius Septimius Severus* (London and Bombay: Humphrey Milford, 1918), called it a "halfway house" to the field armies of Diocletian and Constantine (pp. 162-63).
186. A. Alföldi, *CAH* 12: 213.
187. Manni, *L'Impero di Gallieno*, pp. 58-59 and notes; De Regibus, *La Monarchia Militare di Gallieno*, pp. 78-79; Alföldi, *CAH* 12: 216-18; Besnier, *L'Empire romain de l'avènement des Sévères*, p. 190.
188. *Ibid.*, p. 185, 225, 232.
189. Parker, "Legions of Diocletian and Constantine," p. 188.
190. Besnier, *L'Empire romain de l'avènement des Sévères*, p. 190.
191. Stein, *Histoire du Bas-Empire*, p. 55 and n. 216 (vol. 2, p. 430), based on the number in Vegetius, II.6, and on the dating of Stein's source to the period 260-90. Cf. H. M. D. Parker, "The *Antiqua Legio* of Vegetius," *Classical Quarterly* 26 (1932): 137-49 *passim*, for dating.
192. Alföldi, *CAH* 12: 217.
193. *Ibid.*, p. 216.
194. Cited in Paschoud, *Études sur le patriotisme romain*, p. 117.
195. The conclusion of John W. Eadie, "The Development of the Roman Mailed Cavalry," *JRS* 57 (1967): 161-73.
196. *Ibid.*, pp. 166 (Josephus, B. J. III.5.5) and 167. The *contus* is the standard cavalry weapon in Vegetius; Coussin, *Armes romaines*, p. 479.
197. *Ibid.*, p. 167.
198. *Ibid.*, pp. 169-70.
199. Homo, *Essai sur le règne de l'empereur Aurélien*, p. 88.
200. *Ibid.*, pp. 94, 99.
201. Eadie, "Development of Roman Mailed Cavalry," p. 170. Listed in the *Notitia* are a *schola*, a *cuneus* and five *equites* of *clibanarii*, in the East, as well as one *equites* and the *sagittarii* in the West.

202. See *ibid.*, p. 172, for some examples.

203. Seston, *Dioclétien et la tétrarchie*, pp. 52-53. The date 298 in Seston is a misprint. Read 285. Cf. Besnier, *L'Empire romain de l'avènement des Sévères*, pp. 277-78.

204. Jones, *Later Roman Empire*, vol. 1, p. 55; there are certainly many *equites* in the *Notitia* for Palestine. It was garrisoned by twelve *equites*, Arabia by eight, Phoenice by twelve, Syria by ten, Osrohène by nine, and Mesopotamia by nine; *ibid.*, vol. 3, table 10, p. 376.

205. Seston, *Dioclétien et la tétrarchie*, p. 299. Note, however, that in the *Notitia* lists for the eastern frontiers (Jones, *Later Roman Empire*, vol. 3, table 10, p. 376), there is no numerical correlation between the number of legions and the number of *equites promoti*. Cf. Jones, *Later Roman Empire*, vol. 1, p. 53.

206. This is a view held by Mommsen, Seeck, and Grosse, and reiterated by Stein, *Histoire du Bas-Empire*, vol. 1, pp. 72-73, among others. Seston, *Dioclétien et la tétrarchie*, pp. 302-7, presents a modified orthodox view, concluding, "L'armée des comitatenses du Bas-Empire est donc née d'une conception stratégique de Gallien, dont le danger politique a été supprimé par Dioclétien et dont Constantin a perfectionné l'organisation technique."

207. Passerini, *Coorti Praetoriae*, p. 57. For example, some Praetorians went to Mauretania with the Augustus Maximian in 296; cited by Seston, *Dioclétien et la Tétrarchie*, p. 119, n. 1.

208. On the *lanciarrii* as troops of the *comitatus*, see Parker, "Legions of Diocletian and Constantine," p. 186. Jones, *Later Roman Empire*, vol. 1, pp. 55, suggests that the *lanciarrii* were probably assigned to the frontier sectors under Diocletian, and that they were not part of the *comitatus*. Van Berchem, *L'Armée de Dioclétien*, p. 107, suggests that they were, in any case, few in number. But in the *Notitia* there are several legions of *lanciarrii*; see S. Mazzarino, *DE*, vol. 4 s.v. "Lanciarrii"; and Seston, "Du Comitatus de Dioclétien aux Comitatuses de Constantin," pp. 293-94. Both reiterate the role of the *lanciarrii* in the *comitatus*.

209. As members of the *comitatus* (therefore made larger), see *ibid.*; as normal cavalry, which had once been attached temporarily to the imperial retinue but not permanently of it, van Berchem, *L'Armée de Dioclétien*, pp. 107-8. In contrast, see Jones, *Later Roman Empire*, vol. 1, p. 52, 53. Nevertheless, Jones (vol. 2, p. 608) describes the *comitatus* as "small."

210. By Nischer, "Army Reforms of Diocletian and Constantine." Cf. N. H. Baynes' rebuke: "Three Notes on the Reforms of Diocletian and Constantine," *JRS* 15 (1925): 201-8, and Parker's detailed refutation, "Legions of Diocletian and Constantine."

211. Van Berchem, *L'Armée de Dioclétien*, whose conclusions are stated in pp. 113-18. In his conclusion, van Berchem finds that the narrative sources, the *Suda*, Aurelius Victor (cited n. 3 and 4, p. 115), and especially Zosimus II.34, confirm his argument, which is, however, independent of them; Nischer too had found corroborative support in the narrative sources, but Parker had rejected their value. Seston, in his review of van Berchem (n. 246), insists on the prejudiced mendacity of Zosimus. It is interesting to note that in any case the passage in dispute, II.34, exemplifies the inability of Zosimus, and doubtless many others with him, to understand the military logic of a deep defense-in-depth strategy.

212. Seston, "Du Comitatus de Dioclétien aux comitatenses de Constantin" (n. 246). Seston praises Van Berchem's method but does not accept his conclusions. Várady, "New Evidences on Some Problems of Late Roman Military Organization" (n. 158), rejects the method also, since he does not believe that the *Notitia* has ordered strata.

213. Jones, *Later Roman Empire*, vol. 1, pp. 54-55, 97; vol. 2, p. 608.

214. Denis Van Berchem, "On Some Chapters of the *Notitia Dignitatum* Relating to the Defense of Gaul and Northern Britain," *American Journal of Philology* 76 (1955): 147.

215. Jones, *Later Roman Empire*, vol. 1, p. 97. Seston, *Dioclétien et la tétrarchie*, p. 307, describes them as *techniciens*.

216. Total figure is from Jones, *Later Roman Empire*, vol. 3, table 15, p. 379.

217. *Ibid.*, vol. 1, p. 98. Cf. Stein, *Histoire du Bas-Empire*, vol. 1, p. 73, where the *auxilia* are attributed to Diocletian.

218. Zosimus, *Historia Nova*, trans. James J. Buchanan and Harold T. Davis (San Antonio: Trinity University Press, 1967), II. 34.

219. Jones, *Later Roman Empire*, vol. 2, pp. 649-54. From 325 on, the sectoral forces (*ripenses*) were given a status lower than the *comitatenses* though higher than the *alares* and *cohortales*, according to Van Berchem, *L'Armée de Dioclétien*, p. 85.

220. Émilienne Demougeot, *De L'Unité à la division de l'empire romain 395-410: Essai sur le gouvernement impérial* (Paris: Librairie d'Amérique et d'Orient, 1951), p. 511.

221. Santo Mazzarino *Stilicone: La crisi imperiale dopo Teodosio* (Rome: Angelo Signorrelli, 1942), pp. 128-29.

222. The figures in Table 3.1 may be contrasted to the data cited by Arthur E. R. Boak in *Manpower Shortage: And the Fall of the Roman Empire in the West*, Jerome Lectures, 3d ser. (Ann Arbor: The University of Michigan Press, 1955), p. 91, estimates of the fourth-century army by Piaganiol (under 400,000), Seeck (400-600,000), Lot (450-471,000), Cary, Grosse, Stein and Segrè (ca. 500,000), and J. B. Bury (600-650,000), in all of which the field army is estimated at ca. 200,000.

223. Birley, "Septimius Severus and the Roman Army," p. 78.

## EPILOGUE

1. The *palatini* are first recorded in a constitution of 365, C.Th. VIII.i.10; cited by Jones, *Later Roman Empire*, vol. 3, n. 28, pp. 21-22.

2. Related by Priscus, quoted, with comments, in E. A. Thompson, *A History of Attila and the Huns* (Oxford: At the Clarendon Press, 1948), pp. 113, 185-86. But others thought otherwise; see, among others, Adrian N. Sherwin-White, *The Roman Citizenship*, 2d ed. (Oxford: At the Clarendon Press, 1973), pp. 425-68 *passim*.

## APPENDIX

1. Robert E. Osgood, in Robert E. Osgood and Robert W. Tucker, *Force, Order and Justice* (Baltimore: Johns Hopkins Press, 1967), p. 3.

2. *Ibid.*

3. See, for example, Roderick Bell, David V. Edwards, and R. Harrison Wagner, eds. *Political Power: A Reader in Theory and Research* (New York: The Free Press, 1969), a compendium of definitions in modern American political science. Also, for a phenomenological study in historical perspective, see Bertrand de Jouvenel, *Power: Its Nature and the History of Its Growth* (Boston: Beacon Press, 1967). For a sociological orientation, see Dorothy Emmet, *Function, Purpose and Powers* (London: MacMillan and Co. 1958). For an anthropological perspective, see Eugene V. Walter, *Terror and Resistance: A Study of Political Violence* (New York: Oxford University Press, 1969), which is a study of Zulu political life under the kings.

4. Hans J. Morgenthau, *Politics Among Nations*, 3d. ed. (New York: Alfred A. Knopf, 1962), p. 26.

5. Peter Bachrach and Morton S. Baratz, *Power and Poverty* (New York: Oxford University Press, 1970), pp. 17-38.

6. *Ibid.*

7. E.g., Robert A. Dahl, *Modern Political Analysis* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1963), pp. 39-54; J. David Singer, "Inter-Nation Influence: A Formal Model," *American Political Science Review* 57 (1963): 420-30; K. J. Holsti, *International Politics*, 2d ed. (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1972), pp. 154-58, and many others.

8. Dahl, *Modern Political Analysis*, p. 41.

9. For a notable exception, see P. Bachrach and M. S. Baratz, "Decision and Nondecision: An Analytical Framework," *American Political Science Review* 57 (1963): 632-42, where the distinction is made clear, and where it is pointed out that it is noncompliance with the orders of the powerful that imposes on the latter the costs of using force.

10. It does not matter to whom, or to what groups, the "ownership" of the means of security (and the burden of providing the inputs) is attributed. Given full internal control, all the resources of society are available for appropriation by the ruling power,

so that societal costs not borne directly by the latter are still costs to it, at least in possible exactions forgone.

11. For the development of the concept of "suasion," descriptive of the actual process resulting from the presence, display, or symbolic application of force, see Edward N. Luttwak, *The Political Uses of Sea Power* (Baltimore: John Hopkins University Press, 1974). The context is naval but the theory is generally applicable.

12. Peter Blau, *Exchange and Power in Social Life* (New York: John Wiley, 1964), compares power to status but then goes on to treat it as capital—expendable capital. Cf. Talcott Parsons, "On the Concept of Political Power" in *Political Power: A Reader in Theory and Research*, pp. 256-57, where power is defined in terms comparable to money, this also suggesting its exhaustion by use.

13. I mean "rational" in the value-free sense of an ability to align ends and means in a way intended to optimize the former, whatever they may be.

14. I.e., to the Bachrach-Baratz definition; see note 12, above.

15. This admittedly excludes from consideration cases in which the opponents seek negative values, e.g., glorious martyrdom, as well as cases in which the opponents have no values vulnerable to attack, or at least no values that are attack-worthy.

## LIST OF WORKS CITED

### I

#### Articles and Contributions to Collective Works

- Alföldi, Andrés. "La Grande Crise du monde romain au IIIe siècle." *L'Antiquité classique* 7 (1938): 5-18.
- . "The Moral Barrier on Rhine and Danube." In [Third] *Congress of Roman Frontier Studies*, 1949, pp. 1-16.
- Alföldy, Géza. "Die Hilfstruppen der römischen Provinz Germania Inferior." *Epigraphische Studien*, no. 6.
- Amit, Moché. "Les Moyens de communication et la défense de l'empire romain." *La Parola del Passato*, vol. 20, fasc. 102 (1965), pp. 207-22.
- Bachrach, Peter, and Baratz, Morton S. "Two Faces of Power." *American Political Science Review* 56 (December 1962): 947-52.
- . "Decisions and Non-Decisions: An Analytical Framework." *American Political Science Review* 57 (September 1963): 632-43.
- Baradez, Jean L. "Organisation militaire romaine de l'Algérie antique et l'évolution du concept défensif de ses frontières." *Revue internationale d'histoire militaire*, no. 13 (1953), pp. 24-42.
- . "L'Enceinte de Tipasa: Base d'opérations des troupes venues de Pannonie sous Antonin Le Pieux." In *Quintus Congressus Internationalis Limitis Romani Studiosorum*. pp. 75-82.
- . "Les Thermes légionnaires de Gemellae." In *Corolla Memoriae Erich Swoboda Dedicata*, pp. 14-22.
- . "L'Enceinte de Tipasa et ses portes." In *Mélanges Piganiol* [ed. Chevallier], vol. 2, pp. 1133-52.
- . "Compléments inédits au 'Fossatum Africae.'" In *Studien zu den Militärgrenzen Roms*, pp. 200-10.

- Bartoccini, Renato. "Il Porto di Leptis Magna nella sua vita economica e sociale." In *Hommages à Albert Grenier* [ed. Renard], vol. 1, pp. 228-42.
- Baynes, N.H. "Three Notes on the Reforms of Diocletian and Constantine." *Journal of Roman Studies* 15 (1925): 195-208.
- Berchem, Denis van. "L'Année militaire dans l'empire romain au III<sup>e</sup> siècle." In *Mémoires de la société nationale des antiquaires de France*, vol. 80, ser. 8, bk. 10, pp. 117-202. Paris: G. Klincksieck, 1937.
- . "Aspects de la domination romaine en Suisse." *Schweizerische Zeitschrift für Geschichte* 5 (1955): 145-75.
- . "On Some Chapters of the *Notitia Dignitatum* Relating to the Defense of Gaul and Britain." *American Journal of Philology*, vol. 76, no. 302 (1955), pp. 138-47.
- . "Conquête et organisation par Rome des districts alpins." *Revue des études latines* 11 (1962): 228-35.
- Betz, A. "Zur Dislokation der Legionen in der Zeit vom Tode des Augustus bis zum Ende der Prinzipatsepoche." In *Carnuntina* [ed. Swoboda], pp. 17-24.
- Birley, Anthony R. "Excavations at Carpow." *Studien zu den Militärgrenzen Roms*, pp. 1-5.
- Birley, Eric B. "A Note on the title 'Gemina.'" *Journal of Roman Studies* 18 (1928): 56-60.
- . "The Brigantian Problem and the First Roman Contact with Scotland." In *Roman Britain and the Roman Army*, pp. 31-47.
- . "Britain after Agricola and the End of the Ninth Legion." In *idem, Roman Britain and the Roman Army*, pp. 25-28.
- . "Britain under the Flavians: Agricola and His Predecessors." In *idem, Roman Britain and the Roman Army*, pp. 10-19.
- . "Hadrianic Frontier Policy." In *Carnuntina* [ed. Swoboda], pp. 26-33.
- . "Alae and Cohortes Militariae." In *Corolla Memoriae Erich Swoboda Dedicata*, pp. 54-67.
- . "Hadrian's Wall and Its Neighbourhood." *Studien zu den Militärgrenzen Roms*, pp. 6-14.
- . "Septimius Severus and the Roman Army." *Epigraphische Studien*, no. 8 (1969), pp. 63-82.
- . "The Fate of the Ninth Legion." In *Soldier and Civilian in Roman Yorkshire* [ed. Butler], pp. 71-80.
- Bowersock, G. W. "A Report on Arabia Provincia." *Journal of Roman Studies* 61 (1971): 219-42.
- Breeze, D. J. "The Organization of the Legion: The First Cohort and the *Equites Legionis*." *Journal of Roman Studies* 59 (1969): 50-55.
- Breeze, D. J., and Dobson, Brian. "Hadrian's Wall: Some Problems." *Britannia* 3 (1972): 182-208.
- Brogan, Olwen. "The Roman Limes in Germany." *Archaeological Journal* 92 (1935): 1-41.
- Brunt, P. A. Review of *Die Aussenpolitik des Augustus und die augusteische Dichtung*, by Hans D. Meyer. *Journal of Roman Studies* 53 (1963): 170-76.
- Brusin, Giovanni. "Le Difese della romana Aquileia e la loro cronologia." In *Corolla Memoriae Erich Swoboda Dedicata*, pp. 84-94.
- Burns, T. S. "The Battle of Adrianople: A Reconsideration." *Historia* 23 (1973): 336-45.
- Butler, R. M. "The Roman Walls of Le Mans." *Journal of Roman Studies* 48 (1958): 33-39.
- . "Late Roman Town Walls in Gaul." *Archaeological Journal* 116 (1959): 25-50.
- . "The Defences of the Fourth-Century Fortress at York." In *Soldier and Civilian in Roman Yorkshire* [ed. Butler], pp. 97-106.
- Cagnat, R. "Les Frontières militaires de l'empire romain." *Journal des savants*, January 1901, pp. 29-40.
- Cavaignac, E. "Les Effectifs de l'armée d'Auguste." *Revue des études latines* 30 (1952): 285-96.
- Chevallier, Raymond. "Rome et la Germanie au 1<sup>er</sup> siècle: Problèmes de colonisation." *Latomus* 20 (1961), fasc. i, pp. 33-51, fasc. ii, pp. 266-80.
- Chilver, G. E. F. "The Army in Politics A.D. 68-70." *Journal of Roman Studies* 47 (1957): 29-35.
- Collingwood, R. G. "The Purpose of the Roman Wall." *Vasculum* 8 (1920): 4-9.
- Condurachi, E. "Neue Probleme und Ergebnisse der Limes-forschung in Scythia Minor." *Studien zu den Militärgrenzen Roms*, pp. 162-74.

- Corder, Philip. "The Reorganization of the Defences of Romano-British Towns in the Fourth Century." *Archaeological Journal*, 112 (1955): 20-42.
- Crump, G. A. "Ammianus and the Late Roman Army." *Historia* 23 (1973): 91-103.
- Daicoviciu, Constantin. "Dacia." In *Hommages à Albert Grenier* [ed. Renard], vol. 1, pp. 462-73.
- Davies, R. W. "The 'Abortive Invasion' of Britain by Gaius." *Historia* 15 (1966): 124-28.
- . "A Note on a Recently Discovered Inscription in Carrawburgh. Appendix." *Epigraphische Studien*, no. 4 (1967), pp. 108-11.
- . "Joining the Roman Army." *Bonner Jahrbücher* 169 (1969): 208-32.
- . "The Medici of the Roman Armed Forces." *Epigraphische Studien*, no. 8 (1969), pp. 83-99.
- . "Cohortes Equitatae." *Historia* 20 (1971): 751-63.
- . "The Romans at Burnswark." *Historia* 21 (1972): 98-113.
- . "The Daily Life of the Roman Soldier under the Principate." *Aufstieg und Niedergang der Römischen Welt* [ed. Temporini], pt. 2, Vol. 1, pp. 299-338.
- Dobiáš, J. "King Maroboduus as a Politician." *Klio* 38 (1960): 155-66.
- Dobson, Brian, and Breeze, D. J. "Hadrian's Wall: Some Problems." *Britannia* 3 (1972): 182-208.
- Doise, J. "Le Commandement de l'armée romaine sous Théodose et les débuts des règnes d'Arcadius et d'Honorius." *Mélanges d'archéologie et d'histoire, École française de Rome*, vol. 61 (1949), pp. 183-94.
- Dyson, L. "Native Revolts in the Roman Empire." *Historia* 20 (1971): 239-74.
- Eadie, John W. "The Development of Roman Mailed Cavalry." *Journal of Roman Studies* 57 (1967): 161-73.
- Euzennat, Maurice. "Le Limes de Volubilis." In *Studien zu den Militärgrenzen Roms*, pp. 194-99.
- Finley, M. I. Review of *Manpower Shortage*, by A. E. R. Boak. *Journal of Roman Studies* 48 (1958): 156-64.
- Fishwick, D. "The Annexation of Mauretania." *Historia* 20 (1971): 467-87.
- Fitz, J. "A Military History of Pannonia from the Marcomann Wars to the Death of Alexander Severus (180-235)." *Acta Archaeologica Academiae Scientiarum Hungaricae* 14 (1962): 25-112.
- . "Réorganisation militaire au début des guerres marcomannes." *Hommages à Marcel Renard* [ed. Bibaw], vol. I, pp. 262-74.
- Florescu, Radu. "Les Phases de construction du castrum Drobeta (Turnu Severin)." *Studien zu den Militärgrenzen Roms*, pp. 144-51.
- Forni, Giovanni. "Contributo alla storia della Dacia romana." *Athenaeum* n.s., vol. 36 (1958-59): 3-29 (fasc. 1-2), 193-218 (fasc. 3).
- . "Limes," in *Dizionario Epigrafico*, vol. 4, fasc. 34-40, pp. 1,074-280.
- . "Estrazione etnica e sociale dei soldati delle legioni nei primi tre secoli dell'impero." *Aufstieg und Niedergang der Römischen Welt* [ed. Temporini] pt. 2, vol. 1, pp. 339-91.
- Frankfort, Thérèse. "Le Royaume d'Agrippa II et son annexion par Domitien." In *Hommages à Albert Grenier* [ed. Renard], vol. 2, pp. 659-72.
- Frova, Antonio. "The Danubian Limes in Bulgaria and Excavations at Oescus," [Third] *Congress of Roman Frontier Studies*, 1949, pp. 23-30.
- Gichon, M. [S.A.M.] "Roman Frontier Cities in the Negev." *Quintus Congressus Internationalis Limitis Romani Studiosorum*, pp. 195-207.
- . "The Origin of the Limes Palaestinae and the Major Phases of Its Development." *Studien zu den Militärgrenzen Roms*, pp. 175-93.
- . "The Negev Frontier." In *Israel and Her Vicinity in the Roman and Byzantine Periods* [ed. Applebaum], pp. 35-61.
- Gigli, G. "Forme di reclutamento militare durante il basso impero." *Rendiconti della classe di scienze morali, storiche e filologiche dell'Accademia dei Lincei*, vol. 8, ser. 2 (1947), pp. 268-89.
- Gilmartin, Kristine. "Corbulo's Campaigns in the East." *Historia* 23 (1973): 583-626.
- Goodchild, R. G. "The Limes Tripolitanus II." *Journal of Roman Studies* 40 (1950): 30-38.
- . "The Roman and Byzantine Limes in Cyrenaica." *Journal of Roman Studies* 43 (1953): 65-76.

- Goodchild, R. G., and Ward-Perkins, J. B. "The Limes Tripolitanus in the Light of Recent discoveries." *Journal of Roman Studies* 39 (1949): 81-95.
- Gray, W. D. "A Political Ideal of the Emperor Hadrian." *Annual Report of the American Historical Association for the Year 1914*, vol. 1, pp. 113-24.
- Hardy, E. G. "Augustus and his Legionaires." *Classical Quarterly* 14 (1921): 187-194.
- Harmand, Jaques. "Les Origines de l'armée impériale: Un Témoignage sur la réalité du pseudo-principat et sur l'évolution militaire de l'Occident." *Aufstieg und Niedergang der Römischen Welt* [ed. Temporini], part 2, vol. 1, pp. 263-98.
- Haverfield, F. "Some Roman Conceptions of Empire." *Occasional Publications of the Classical Association Cambridge*, no. 4 (ca. 1916).
- Henderson, M. I. Review of *Trajan's Persian War*, by F. A. Lepper. *Journal of Roman Studies* 39 (1949): 121-32.
- Jarrett, Michael G. "The Roman Frontier in Wales." *Studien zu den Militärgrenzen Roms*, pp. 21-31.
- Jarrett, Michael G., and Mann, John C. "Britain from Agricola to Gallienus." *Bonner Jahrbücher* 170 (1970): 178-210.
- Kornemann, E. "Die unsichtbaren Grenzen des römischen Kaiserreichs." In *Staaten-Männer-Völker: Aus der geschichte des altertums*. Leipzig: Deiterich, 1934. Pp. 96-116.
- Laet, S. J. de. "Claude et la romanisation de la Gaule septentrionale." *Mélanges Piganiol* [Chevallier], vol. 2, pp. 951-62.
- Laur-Belart, R. "The Late Limes from Basel to the Lake of Constance." [Third] *Congress of Roman Frontier Studies*, 1949, pp. 55-67.
- Leva, C., and Mertens, J. "Le fortin de Braives et le limes belgicus." *Mélanges Piganiol* [Chevallier], vol. 2, pp. 1,063-74.
- McLeod, W. "The Range of the Ancient Bow." *Phoenix* 19, no. 1 (1965): 1-14.
- Mann, John C. "A Note on the Numeri." *Hermes* 82 (1954): 501-6.
- . "The Raising of New Legions during the Principate." *Hermes* 91 (1963): 483-89.
- . "The Role of the Frontier Zone in Army Recruitment." *Quintus Congressus Internationalis Limitis Romani Studiosorum*, pp. 145-50.
- Mann, John C., and Jarrett, M. G. "Britain from Agricola to Gallienus." *Bonner Jahrbücher* 170 (1970): 178-210.
- . "The Frontiers of the Principate." *Aufstieg und Niedergang der Römischen Welt* [ed. Temporini], part 2, vol. 1, pp. 508-33.
- Marin, A. "Hippagoge." In *Dictionnaire des antiquités grecques et romaines* [Daremberg-Saglio], vol. 4, pp. 183-86.
- Mertens, J. "Oudenburg, camp du Litus Saxonicum en Belgique?" In *Quintus Congressus Internationalis Limitis Romani Studiosorum*, pp. 123-31.
- Mertens, J., and Leva, C. "Le Fortin de Braives et le Limes Belgicus." *Mélanges Piganiol* [Chevallier], vol. 2, pp. 1,063-74.
- Millar, Fergus. "P. Herennius Dexippus: The Greek World and the Third-Century Invasions." *Journal of Roman Studies*, 59 (1969): 12-29.
- Morris, John. "The Vallum Again." *Transactions of the Cumberland and Westmoreland Antiquarian and Archaeological Society*, n.s. 50 (1951): 43-53.
- Moss, J. R. "The Effects of the Policies of Aetius on the History of the Western Empire." *Historia* 23 (1973): 711-31.
- Nischer, E. "The Army Reforms of Diocletian and Constantine and Their Modifications up to the Time of the Notitia Dignitatum." *Journal of Roman Studies* 13 (1923): 1-55.
- Nock, A. D. "The Roman Army and the Roman Religious Year." *Harvard Theological Review* 45 (1952): 187-252.
- Oelmann, F. "The Rhine Limes in Late Roman Times." [Third] *Congress of Roman Frontier Studies*, 1949, pp. 81-99.
- O'Neill, R. J. "Doctrine and Training in the German Army 1919-1939." *The Theory and Practice of War* [ed. Howard], pp. 145-65.
- Parker, H. M. D. "The Antiqua Legio of Vegetius." *Classical Quarterly* 26 (1932): 137-49.
- . "The Legions of Diocletian and Constantine." *Journal of Roman Studies* 23 (1933): 175-89.
- Parsons, T. "On the Concept of Political Power." In *Political Power* [Bell et al.], pp. 251-84.

- Passerini, A. "Gli Aumenti del soldo militare da Commodo a Massimino." *Athenaeum* 24 (1946): 145-59.
- . "Legio." In *Dizionario Epigrafico*, vol. 4, fasc. 18-20, pp. 549-627.
- Pékáry, Th. "Studien zur römischen Währungs und Finanzgeschichte von 161 bis 235 n. Ch." *Historia* 8 (1959): 443-89.
- Perret, Louis. "Essai sur la carrière d'Hadrien jusqu'à son avènement à l'empire (76-117)." *Mémoires de la société nationale des antiquaires de France*, vol. 80, ser. 8, bk. 9. Paris: G. Klincksieck, 1937.
- Petrikovits, Harald von. "Fortifications in the North-Western Roman Empire from the Third to the Fifth Centuries A.D." *Journal of Roman Studies* 61 (1971): 178-218.
- Pflaum, H.-C. "Forces et faiblesses de l'armée romaine du Haut-Empire." *Problèmes de la guerre à Rome* [Brisson], pp. 85-98.
- Piganiol, A. "La Notion de Limes." *Quintus Congressus Internationalis Limitis Romani Studiosorum*, pp. 119-22.
- Ramsay, A. M. "The Speed of the Roman Imperial Post." *Journal of Roman Studies* 15 (1925): 60-74.
- Rémondon, Roger. "Problèmes militaires en Egypte et dans l'empire à la fin du IV siècle." *Revue historique* 213 (1955): 21-38.
- Richmond, Sir Ian A. "Trajan's Army on Trajan's Column." *Papers of the British School at Rome* 13 (1935): 1-40.
- . "The Romans in Redesdale." *History of Northumberland* 15 (1940): 116-29.
- . "Hadrian's Wall 1939-1949." *Journal of Roman Studies* 40 (1950): 43-56.
- . "A Roman Arterial Signalling System in the Stainmore Pass." *Aspects of Archaeology* [ed. Grimes], pp. 293-302.
- . "Queen Cartimandua." *Journal of Roman Studies* 44 (1954): 43-52.
- . "The Roman Frontier Land." *History* [U.K.], vol. 44, no. 150 (February 1959), pp. 1-15.
- . "The Roman Siege-Works of Masàda, Israel." *Journal of Roman Studies* 52 (1962): 142-55.
- . "Palmyra under the Aegis of Rome." *Journal of Roman Studies* 53 (1963): 43-54.
- Robertson, Anne S. "The Antonine Wall." *Congress of Roman Frontier Studies*, 1949, pp. 99-111.
- Robinson, H. R. "Problems in Reconstructing Roman Armour." *Bonner Jahrbücher* 172 (1972): 24-35.
- Rowell, H. T. "The Honesta Missio from the Numeri of the Roman Imperial Army." *Yale Classical Studies* 6 (1939): 73-108.
- Saddington, D. B. "Roman Attitudes to the Externae Gentes of the North." *Acta Classica* [S.A.] 4 (1961): 90-102.
- . "The Development of Roman Auxiliary Forces from Augustus to Trajan." *Aufstieg und Niedergang der Römischen Welt* [ed. Temporini], pt. 2, vol. 3, pp. 176-201.
- Salama, Pierre. "Occupation de la Maurétanie césarienne occidentale sous les Bas-Empire romain." *Mélanges Piganiol* [Chevallier], vol. 3, pp. 1,291-311.
- Salmon, E. T. "The Roman Army and the Disintegration of the Roman Empire." *Proceedings and Transactions of the Royal Society of Canada*, 3d series, vol. 52 (1958), sect. 2, pp. 43-60.
- Saint-Denis, E. de. "Mare Clausum." *Revue des études latines*, 25 (1947): 200-203.
- Schönberger, H. "The Roman Frontier in Germany: An Archaeological Survey." *Journal of Roman Studies* 59 (1969): pp. 144-97.
- Seston, William. "Du Comitatus de Dioclétien aux comitatenses de Constantin." *Historia* 4 (1955): 284-96.
- Shaw, R. C., and Simpson, F. G. "The Purpose and Date of the Vallum and Its Crossings." *Transactions of the Cumberland and Westmoreland Antiquarian and Archaeological Society*, n.s. 27 (1922): 40-100.
- Sherwin-White, A. N. "Geographical Factors in Roman Algeria." *Journal of Roman Studies* 34 (1944): 1-10.
- Simpson, F. G., and Shaw, R. C. "The Purpose and Date of the Vallum and Its Crossings." *Transactions of the Cumberland and Westmoreland Antiquarian and Archaeological Society*, n.s. 27 (1922): 40-100.

- Simpson, Grace. "The Roman Forts in Wales: A Reassessment." *Studien zu den Militärgrenzen Roms*, pp. 32-34.
- Smallwood, E. Mary. "Palestine c. A.D. 115-118." *Historia* 11 (1962): 502-5.
- Smith, R. E. "The Army Reforms of Septimius Severus." *Historia* 12 (1972): 481-500.
- Steer, Kenneth A. "The Antonine Wall: A Reconsideration." *Studien zu den Militärgrenzen Roms*, pp. 35-41.
- Stevens, C. E. "The British Sections of the *Notitia Dignitatum*." *Archaeological Journal* 97 (1940): 125-54.
- . "Britain between the Invasions (54 B.C.-A.D. 43): A Study of Ancient Diplomacy." In *Aspects of Archaeology* [ed. Grimes], pp. 332-44.
- Swoboda, E. "Traian und der Pannonische Limes." *Empereurs romains d'Espagne* [Centre nationale de la recherche scientifique], pp. 195-208.
- Syme, R. "Rhine and Danube Legions under Domitian." *Journal of Roman Studies* 18 (1928): 41-55.
- . "Some Notes on the Legions under Augustus." *Journal of Roman Studies* 23 (1933): 14-33.
- . "The Lower Danube under Trajan." *Journal of Roman Studies* 49 (1959): 26-33.
- . "Hadrian the Intellectual." *Empereurs romains d'Espagne* [Centre nationale de la recherche scientifique], pp. 243-53.
- Szilágyi, J. "Roman Garrisons Stationed at the Northern Pannonia-Quad Frontier-Sectors of the Empire." *Acta Archaeologica Academiae Scientiarum Hungaricae* 2 (1952): 189-220.
- . "Les Variations des centres de prépondérance militaire dans les provinces frontières de l'empire romain." *Acta Antiqua Academiae Scientiarum Hungaricae* 2(1953): fasc. 1-2, pp. 119-219.
- Thompson, E. A. "The Foreign Policies of Theodosius II and Marcian." *Hermathena*, no. 76 (1950), pp. 58-75.
- . "The Settlement of the Barbarians in Southern Gaul." *Journal of Roman Studies* 46 (1956): 65-75.
- Thompson, Homer A. "Athenian Twilight: A.D. 267-600." *Journal of Roman Studies* 49 (1959): 61-72.
- Tierney, J. J. "The Map of Agrippa." *Proceedings of the Royal Irish Academy*, vol. 63, sect. C, no. 4 (1963), pp. 151-66.
- Vannérus, Jules. "Le Limes et les fortifications gallo-romaines de Belgique: Enquête toponymique." *Académie royale de Belgique, Mémoires*, coll. 4, 2<sup>e</sup> ser., vol 9, fasc. 2.
- Várady, L. "New Evidences on Some Problems of Late Roman Military Organization." *Acta Antiqua Academiae Scientiarum Hungaricae* 9 (1961): 333-96.
- . "Additional Notes on the Problem of Late-Roman Dalmatian Cunei." *Acta Antiqua Academiae Scientiarum Hungaricae* 11 (1963): 333-96.
- Vita, A. Di. "Il Limes romano di Tripolitania nella sua concretezza archeologica e nella sua realtà storica." *Libya Antiqua* 1 (1964): 65-98.
- Ward-Perkins, J. B., and Goodchild, R. G. "The Limes Tripolitanus in the Light of Recent Discoveries." *Journal of Roman Studies* 39 (1949): 81-95.
- Waters, Kenneth Hugh. "The Reign of Trajan in Contemporary Scholarship." *ANRW*, pt. 2, vol. 2, pp. 381-430.
- Watson, G. R. "The Pay of the Roman Army: The Auxiliary Forces." *Historia* 8 (1959): 372-78.
- Webster, G. "The Legionary Fortress at Lincon." *Journal of Roman Studies* 39 (1949): 57-78.
- . "The Claudian Frontier in Britain." *Studien zu den Militärgrenzen Roms*, pp. 42-53.
- Wells, C. M. "The Augustan Penetration of Germany, Dates and Destinations." *Roman Frontier Studies* 1967, pp. 1-6.
- Wheeler, [Sir] R. E. M. "The Roman Frontier in Mesopotamia." *Congress of Roman Studies*, 1949, pp. 112-29.
- Wilkes, J. J. "A Note on the Mutiny of the Pannonian Legions in A.D. 14." *Classical Quarterly*, n.s., vol. 13, no. 2 (November 1963), pp. 268-71.
- Will, E. "Les Enceintes du bas-empire à Bayreuth." *Quintus Congressus Internationalis Limitis Romani Studiosorum*, pp. 99-110.

## II

## Books and Monographs

- Adcock, Frank Ezra. *The Roman Art of War under the Republic*. Martin Classical Lectures, vol. 8. Cambridge, Mass.: Harvard University Press, 1940.
- Alföldi, Andreas. *A Conflict of Ideas in the Late Roman Empire: The Clash between the Senate and Valentinian I*. Oxford: At the Clarendon Press, 1952.
- Andreotti, R. *Il Regno dell'imperatore Giuliano*. Bologna: N. Zanichelli, 1936.
- Applebaum, Shimon, and Gichon, Mordechai. *Israel and Her Vicinity in the Roman and Byzantine Periods*. Tel Aviv: Tel Aviv University Press, 1967.
- Arias, Paolo E. *Domiziano: Saggi e ricerche*. No. 9. Catania (Sicily): G. Crisafulli, 1945.
- Aussaresses, F. *L'Armée byzantine à la fin du VI<sup>e</sup> siècle: d'après le strategicon de l'empereur Maurice*. Bibliothèque des universités du midi. Fasc. 14. Bordeaux: Feret and fils, 1909.
- Badian, Ernst. *Foreign Clientelae (264-70 B.C.)*. Oxford: At the Clarendon Press, 1958.
- . *Roman Imperialism in the Late Republic*. 1965. Reprint. Oxford: Basil Blackwell, 1968.
- . *Publicans and Sinners: Private Enterprise in the Service of the Roman Republic*. Ithaca: Cornell University Press, 1972.
- Balsdon, J. P. V. D. *The Emperor Gaius (Caligula)*. Oxford: At the Clarendon Press, 1934.
- Baradez, Jean Lucien. *Vue-Aérienne de l'organisation romaine dans le Sud-Algérien, fossatum Africae*. Paris: Arts et métiers graphiques, 1949.
- Bell, Roderick; Edwards, David V.; Wagner, R. Harrison, eds. *Political Power: A Reader in Theory and Research*. New York: The Free Press, 1969.
- Berchem, Denis van. *L'Armée de Dioclétien et la réforme constantinienne*. Institut français d'archéologie de Beyrouth, Bibliothèque archéologique et historique 56. Paris: Librairie orientale Paul Geuthner, 1952.
- Bersanetti, Gastone M. *Vespasiano*. Rome: Edizioni Roma, 1941.
- Besnier, Maurice. *L'Empire romain de l'avènement des Sévères au concile de Nicée*. Histoire générale I; Histoire ancienne, pt. 3; Histoire romaine, vol. 4. Paris: Presses universitaires de France, 1937.
- Birley, Anthony R. *Hadrian's Wall: An Illustrated Guide*. Ministry of Public Building and Works. London: H. M. Stationery Office, 1963.
- . *Marcus Aurelius*. London: Eyre and Spottiswoode, 1966.
- . *Septimius Severus: The African Emperor*. London: Eyre and Spottiswoode, 1971.
- Birley, Eric B. *Roman Britain and the Roman Army: Collected Papers*. Kendal: Titus Wilson and Son, 1953.
- . *Research on Hadrian's Wall*. Kendal: Titus Wilson and Son, 1961.
- Blau, Peter. *Exchange and Power in Social Life*. New York: John Wiley, 1964.
- Boak, Arthur Edward Romilly. *The Master of Offices in the Later Roman and Byzantine Empires*. University of Michigan Studies. Humanistic Series, vol. 14. London: Macmillan and Co., 1919.
- . *Manpower Shortage: And the Fall of the Roman Empire in the West*. The Jerome Lectures, third series. Ann Arbor: The University of Michigan Press, 1955.
- Bowersock, Glen W. *Augustus and the Greek World*. Oxford: At the Clarendon Press, 1965.
- Braithwaite, A. W. C. *Suetoni Tranquilli Divus Vespasianus*. Oxford: At the Clarendon Press, 1927.
- Brand, Clarence Eugene. *Roman Military Law*. Austin: University of Texas Press, 1968.
- Bréhier, Louis. *Les Institutions de l'empire byzantin. L'évolution de l'humanité*, vol. 32, bis. Paris: Éditions Albin Michel, 1949.
- Bruce, John Collingwood. *Handbook to the Roman Wall*. 12th ed. by [Sir] Ian A. Richmond. Newcastle: H. Hill Hindson and A. Reid, 1966.
- Brunt, P. A. *Italian Manpower 225 BC-AD 14*. Oxford: At the Clarendon Press, 1971.
- Bury, John Bagnell. *A History of the Later Roman Empire: From Arcadius to Irene (395 A.D. to 800 A.D.)*. Reprint. 2 vols. 1889. Amsterdam: Adolf M. Hakkert, 1966.
- . *The Invasion of Europe by the Barbarians*. 1928. Reprint. New York: Russell and Russell, Inc., 1963.
- Cagnat, René. *L'Armée romaine d'Afrique et l'occupation militaire de l'Afrique sous les empereurs*. Ministère de l'instruction publique. 2d ed. Paris: Ernest Leroux, 1913.

- Calderini, Aristide. *I Severi: La crisi dell'impero nel III secolo*. Istituto di studi romani, Storia di Roma, no. 7. Bologna: Licinio Cappelli Editore, 1940.
- Carcopino, Jérôme. *Les étapes de l'impérialisme romain*. 1934. Reprint. Paris: Hachette, 1961.
- Cary, Max. *The Geographic Background of Greek and Roman History*. Oxford: At the Clarendon Press, 1949.
- Casson, Lionel. *Ships and Seamanship in the Ancient World*. Princeton: Princeton University Press, 1971.
- Chapot, Victor. *La Frontière de l'Euphrate: De Pompée à la conquête arabe*. Paris: A. Fontemoing, 1907.
- Charlesworth, Martin Percival. *Trade Routes and the Commerce of the Roman Empire*. 2d rev. ed. Cambridge: At the University Press, 1926.
- . *Five Men: Character Studies from the Roman Empire*. Martin Classical Lectures, no. 6. Cambridge, Mass.: Harvard University Press, 1936.
- . *The Lost Province, or the Worth of Britain*. Cardiff: University of Wales Press, 1949.
- Chastagnol, André. *Les Bas Empire*. Texts. Paris: Librairie Armand Colin, 1969.
- Cheesman, George Leonard. *The Auxilia of the Roman Imperial Army*. 1914. Reprint. Hildesheim: George Olms, 1971.
- Chevallier, Raymond. *Les Voies romaines*. Paris: Librairie Armand Colin, 1972.
- Chilver, Guy Edward F. *Cisalpine Gaul: Social and Economic History from 49 B.C. to the Death of Trajan*. Oxford: At the Clarendon Press, 1941.
- Christensen, Arthur. *L'Iran sous les Sassanides*. 2d ed. Copenhagen: Ejnar Munksgaard, 1944.
- Christescu, Vasile. *Istoria militară a Daciei Romane*. Bucharest: Fundatia Regele Carol I, 1937.
- Clemente, Guido. *La "Notitia Dignitatum"*. Saggi di storia e letteratura, no. 4. Cagliari, Sardinia: Editrice Sarda Fossataro, 1968.
- Courcelle, Pierre Paul. *Histoire littéraire des grandes invasions germaniques*. 3d ed. Paris: Etudes Augustiniennes, 1964.
- Coussin, Paul. *Les Armes romaines: Essai sur les origines et l'évolution des armes individuelles du légionnaire romain*. Paris: Librairie ancienne Honoré Champion, 1926.
- Curzon, George Nathan, Lord Kedleston. *Frontiers*. Romanes Lecture Series. Oxford: At the Clarendon Press, 1907.
- Dahl, Robert A. *Modern Political Analysis*. Englewood Cliffs, N.J.: Prentice-Hall, 1963.
- Daicovicu, Constantin. *La Transilvania nell'antichità*. Rev. ed. of 1938 essay. Bucharest: n.p., 1943.
- . *La Transylvanie dans l'antiquité*. Bucharest: n.p., 1945.
- Daicovicu, Constantin, and Daicovicu, Hadrain. *Columna lui Traian*. Bucharest: Editura Meridiane, 1968.
- Degrassi, Attilio. *Il Confine nord-orientale dell'Italia romana: Ricerche storico-topografiche*. Dissertationes Bernenses, ser. I, fasc. 6. Bern: A. Francke, 1954.
- Demougeot, Émilienne. *De l'Unité à la division de l'empire romain 395-410: Essai sur le gouvernement impérial*. Paris: Librairie d'Amérique et d'Orient, 1951.
- . *La Formation de l'Europe et les invasions barbares: Des origines germaniques à l'avènement de Dioclétien*. Paris: Aubier, 1969.
- Dudley, Donald Reynolds, and Webster, Graham. *The Roman Conquest of Britain A.D. 43-57*. London: Dufour Éditions, 1965.
- Durry, Marcel. *Les Cohortes Prétoriennes*. Bibliothèque des écoles françaises d'Athènes et de Rome, fasc. 146. Paris: E. de Boccard, 1938.
- Emmet, Dorothy. *Function, Purpose and Powers*. London: Macmillan and Co., 1958.
- Fink, Robert O. *Roman Military Records on Papyrus*. Texts, Varia. Philological Monographs of the American Philological Association, no. 26. Cleveland: Case Western Reserve University, 1971.
- Forni, Giovanni. *Il Reclutamento delle legioni da Augusto a Diocleziano*. Pubblicazioni della facoltà di filosofia e lettere della Università di Pavia, 5. Milan and Rome: Fratelli Bocca, 1953.
- Frank, Richard Ira. *Scholae Palatinae: The Palace Guards of the Later Roman Empire*. Papers and Monographs of the American Academy in Rome, vol. 23. Rome: American Academy in Rome, 1969.

- Frere, Sheppard S. *Britannia: A History of Roman Britain*. London: Routledge and Kegan Paul, 1967.
- Garbsch, Jochen G. *Der Spätromische Donau-Ille Rhein Limes*. Stuttgart: A. W. Gentner, 1970.
- Garzetti, Albino. *L'Impero da Tiberio agli Antonini*. Istituto di studi romani, Storia di Roma, vol. 6. Bologna: Licinio Cappelli, 1960.
- . *Problemi dell'età traianea: Sommario e testi*. Genova: Fratelli Bozzi, 1971.
- Geweke, Lenore K., and Winspear, Alban D. *Augustus and the Reconstruction of Roman Government and Society*. University of Wisconsin Studies in the Social Sciences and Philosophy, no. 24. Madison: University of Wisconsin, 1935.
- Ghirshman, R. *Les Chionites-Hephthalites*. Mémoires de l'institut français d'archéologie orientale du Caire, vol. 53. Mémoires de la délégation archéologique française en Afghanistan, vol. 13. Cairo: Institut français d'archéologie orientale, 1948.
- Gianelli, Giulio. *Trattato di storia romana*. 2 vols. Rev. ed. by Santo Mazzarino. Rome: Tumminelli, 1953-1956.
- Gitti, A. *Ricerche sui rapporti tra i vandali e l'impero romano*. Bari: Laterza, 1953.
- Gonella, Guido. *Pace romana e pace cartaginese*. Quaderni di studi romani, serie seconda, no. 1. Rome: Istituto di studi romani, 1947.
- Goodyear, Francis Richard D. *The Annals of Tacitus*. Vol. 1, Annals I.1-54. Cambridge: At the University Press, 1972.
- Guey, Julien. *Essai sur la guerre parthique de Trajan (114-117)*. Bibliothèque d'Istros, no. 2. Bucharest: S. Lambrino, 1937.
- Hammond, Mason. *The Antonine Monarchy*. American Academy in Rome, Papers and Monographs, no. 19. Rome: American Academy in Rome, 1959.
- . *The Augustan Principate: In Theory and Practice During the Julio-Claudian Period*. Enlarged edition. New York: Russel and Russel, 1968.
- Hardy, Ernest George. *Studies in Roman History*. 2d ser. London: S. Sonnenschein and Co., 1909.
- Harkness, Albert. *The Military System of the Romans*. New York: D. Appleton and Company, 1887.
- Harmand, Jacques. *L'Armée et le soldat à Rome (de 107 à 50 avant notre ère)*. Paris: Ed. A. et J. Picard et Cie., 1967.
- . *La Guerre antique, de Sumer à Rome*. Paris: Presses universitaires de France, 1973.
- Harmand, Louis. *L'Occident romain: Gaule, Espagne, Bretagne, Afrique du Nord (31 av. J. C. à 235 ap. J. C.)*. Paris: Payot, 1960.
- Harmatta, John. *Studies in the History of the Sarmatians*. Magyar-Görög Tanulmányok, 30. Budapest: Pázmány Péter Tudományegyetemi Görög Filológiai Intézet, 1950.
- Hatt, Jean-Jacques. *Histoire de la Gaule romaine (120 avant J.-C. 451 après J.-C.): Colonisation ou colonialisme*. Paris: Payot, 1966.
- Henderson, Bernard W. *The Life and Principate of the Emperor Hadrian A.D. 76-138*. London: Methuen and Co., 1923.
- . *Five Roman Emperors: Vespasian, Titus, Domitian, Nerva, Trajan (69-117)*. 1927. Reprint. New York: Barnes and Noble, 1969.
- Holmes, T. Rice. *The Architect of the Roman Empire 27 B.C.-A.D. 14*. 2 vols. Oxford: At the Clarendon Press, 1928-1931.
- Holsti, K. J. *International Politics: A Framework for Analysis*. 2d ed. Englewood Cliffs, N.J.: Prentice-Hall, 1972.
- Homo, Léon P. *Essai sur le règne de l'empereur Aurélien (270-275)*. Bibliothèque des écoles françaises d'Athènes et de Rome, fasc. 89. Paris: A. Fontemoing, 1904.
- . *Le Siècle d'or de l'empire romain*. Paris: A. Fayard, 1947.
- . *Vespasien l'empereur du bon sens (69-79 ap. J.-C.)*. Paris: Albin Michel, 1949.
- Jones, Arnold Hugh Martin. *The Later Roman Empire (284-602): A Social and Economic Survey*. 3 vols. Oxford: Basil Blackwell, 1964. [3 vols. in 2: Oklahoma University Press, 1964.]
- . ed. Texts, varia *A History of Rome Through the Fifth Century*. 2 vols. New York: Harper and Row, 1970.



- . *Augustus*. London: Chatto and Windus, 1970; New York: W. W. Norton, 1970.
- Jouvenel, Bertrand de. *Power: Its Nature and the History of Its Growth*. Boston: Beacon Press, 1967.
- Kaegi, Walter Emil, Jr. *Byzantium and the Decline of Rome*. Princeton: Princeton University Press, 1968.
- Katz, Solomon. *The Decline of Rome and the Rise of Mediaeval Europe*. Ithaca: Cornell University Press, 1955.
- La Penna, Antonio. *Orazio e l'ideologia del principato*. Saggi no. 332. Turin: Giulio Einaudi, 1963.
- Lemosse, Maxime. *Le Régime des relations internationales dans le haut-empire romain*. Publications de l'Institut de droit romain de l'Université de Paris, vol. 23. Paris: Librairie Sirey, 1967.
- Lepper, F. A. *Trajan's Parthian War*. London: Geoffrey Cumberlege, 1948.
- Lesquier, Jean. *L'Armée romaine d'Égypte d'Auguste à Dioclétien*. Cairo: Institut français d'archéologie orientale, 1918.
- Levi, M. A. [Canavesi, M.] *La Politica estera di Roma antica*. Manuali di politica internazionale 34. 2 vols. Milan: Istituto per gli studi di politica internazionale, 1942.
- Levick, Barbara Mary. *Roman Colonies in Southern Asia Minor*. Oxford: At the Clarendon Press, 1967.
- Lot, Ferdinand. *Les Invasions Germaniques: La pénétration mutuelle du monde barbare et du monde romain*. Paris: Payot, 1935.
- . *L'Art militaire et les armées au Moyen Age en Europe et dans le Proche Orient*. 2 vols. Paris: Payot, 1946.
- . *Nouvelle recherches sur l'impôt foncier et la capitation personnelle sous le Bas-Empire*. Bibliothèque de l'école des hautes études, fasc. 304. Paris: Librairie ancienne Honoré Champion, 1955.
- MacMullen, Ramsay. *Soldier and Civilian in the Later Roman Empire*. Harvard Historical Monographs, vol. 52. Cambridge, Mass.: Harvard University Press, 1963.
- Magie, David. *Roman Rule in Asia Minor to the End of the Third Century after Christ*. 2 vols. Princeton: Princeton University Press, 1950.
- Manni, Eugenio. *L'Impero di Gallieno: Contributo alla storia del III secolo*. Rome: Angelo Signorelli, 1949.
- Marichal, Robert. *L'Occupation romaine de la Basse Égypte: Le statut des auxilia*. Paris: E. Droz, 1945.
- Marín y Peña, Manuel. *Instituciones militares romanas*. Enciclopedia Clásica no. 2. Madrid: Consejo Superior de Investigaciones Científicas Patronato "Menéndez y Pelayo," 1956.
- Marquardt, Joachim. *De l'Organisation militaire chez les Romains*. Rev. ed. A. Von Domaszewski. Trans. J. Brissaud. Manuel des antiquités romaines de Joachim Marquardt et Théodore Mommsen, vol. 11. Paris: A Fontemoing, 1891.
- Marsden, Eric William. *Greek and Roman Artillery: Historical Development*. 2 vols. Oxford: At the Clarendon Press, 1969.
- Marsh, Frank Burr. *The Reign of Tiberius*. London: Oxford University Press, 1931.
- Maspero, Jean. *Organisation militaire de l'Égypte Byzantine*. Bibliothèque de l'école des hautes études, fasc. 201. Paris: Librairie ancienne Honoré Champion, 1912.
- Mazzarino, Santo. *Stilicone: La crisi imperiale dopo Teodosio*. Studi pubblicati dal R. istituto italiano per la storia antica, fasc. 3. Rome: Angelo Signorelli, 1942.
- . *Aspetti sociali del quarto secolo: Ricerche di storia tardo-romana*. Rome: L'Erma di Bretschneider, 1951.
- Mazzarino, Santo, and Gianelli, Giulio. *Trattato di storia romana*. Rev. ed. 2 vols. Rome: Tumminelli, 1953-1956.
- Momigliano, Arnaldo. *Contributo alla storia degli studi classici*. Rome: Edizioni di Storia e Letteratura, 1955.
- . *Terzo Contributo alla storia degli studi classici e del mondo antico*. Rome: Edizioni di Storia e Letteratura, 1966.
- . *Ricerche sull'organizzazione della Giudea sotto il dominio romano (63 a.C.-70 d.C.)*. Amsterdam: A. M. Hakkert, 1967.

- . *Quarto Contributo alla storia degli studi classici e del mondo antico*. Rome: Edizioni di Storia e Letteratura, 1969.
- Morgenthau, Hans J. *Politics Among Nations*. 3d ed. New York: Alfred A. Knopf, 1962.
- Murphy, Gerard James. *The Reign of the Emperor L. Septimius Severus from the Evidence of the Inscriptions*. Philadelphia: n.p., 1945.
- Musset, Lucien. *Les Invasions: Les vagues germaniques*. Nouvelle Clio, no. 12. Paris: Presses universitaires de France, 1965.
- Oates, David. *Studies in the Ancient History of Northern Iraq*. London: Oxford University Press for the British Academy, 1968.
- Oliva, Pavel. *Pannonia and the Onset of the Crisis in the Roman Empire*. Prague: Československé Akademie Věd, 1962.
- Oman, Charles W. C. *A History of the Art of War in the Middle Ages*. 2d rev. ed. 2 vols. London: Methuen and Co., 1924.
- Ondrouch, Vojtěch. *Limes Romanus na Slovensku (il limes romano in Slovacchia)*. Bratislava: Práce Učene Společnosti Šafarikovy v Bratislavě, 1938.
- Orgeval, Bernard d'. *L'empereur Hadrien: Oeuvre législative et administrative*. Paris: Editions Domat Montchrestien, 1950.
- Osgood, Robert E., and Tucker, Robert W. *Force, Order, and Justice*. Baltimore: The Johns Hopkins Press, 1967.
- Parker, Henry Michael Denne. *The Roman Legions*. 1928. Reprinted, with corrections and bibliography. Cambridge: W. Heffer and Sons, 1958.
- Paschoud, François. *Roma aeterna: Études sur le patriotisme romain dans l'occident latin à l'époque des grandes invasions*. Bibliotheca Helvetica Romana, no. 7. Rome: Institut Suisse de Rome, 1967.
- Passerini, Alfredo. *Le Coorti Pretorie*. 1939. Reprint. Rome: Centro Editoriale Internazionale, 1969.
- . *Linee di storia romana in età imperiale*. 2d ed. Revised by Nicola Criniti. Milan: Celuc, 1972.
- Pelham, Henry Francis. *Essays*. Edited by F. Haverfield. Oxford: At the Clarendon Press, 1911.
- Piganiol, André. *L'Empire Chrétien 325-395*. 2d ed. Revised by A. Chastagnol. 1948. Reprint. Paris: Presses universitaires de France, 1972.
- . *Scripta Varia*. Edited by R. Bloch. et al. 3 vols. Collection Latomus, nos. 131-33. Brussels: Latomus, 1973.
- Platnauer, Maurice. *The Life and Reign of the Emperor Lucius Septimius Severus*. London and Bombay: Humphrey Milford, 1918.
- Poidebard, A. *La Trace de Rome dans le désert de Syrie: Le limes de Trajan à la conquête arabe, recherches aériennes, (1925-1934)*. Paris: Librairie orientale Paul Geuthner, 1934.
- Pugliese, Carratelli. *L'età di Valeriano e Gallieno: Appunti di storia romana*. Pisa: Libreria Goliardica, 1950.
- Rachet, Marguerite. *Rome et les Berbères: Un Problème militaire d'Auguste à Dioclétien*. Collection Latomus, vol. 110. Brussels: Latomus, 1970.
- Regibus, Luca de. *La Monarchia militare di Gallieno*. Recco, Italy: Editrice Nicoloso da Recco, 1939.
- Rémondon, Roger. *La Crise de l'empire romain de Marc Aurèle à Anastase*. Nouvelle Clio, no. 11. Paris: Presses universitaires de France, 1964.
- Reynolds, P. K. B. *The Vigiles of Ancient Rome*. Oxford: At the Clarendon Press, 1926.
- Richmond, Sir Ian A. *The City Wall of Imperial Rome: An Account of its Architectural Development from Aurelian to Narses*. Oxford: At the Clarendon Press, 1930.
- Romanelli, Pietro. *La Cirenaica Romana 96 A.C.-642 D.C.* Verbania: A. Airoldi, 1943.
- Rossi, Lino. *Trajan's Column and the Dacian Wars*. Edited and translated by J. M. C. Toynbee. London: Thames and Hudson, 1971.
- Rougé, Jean. *Les Institutions romaines: De la Rome royale à la Rome chrétienne*. Paris: Librairie Armand Colin, 1969.
- Rowell, Henry T. *Ammianus Marcellinus, Soldier-Historian of the Late Roman Empire*. Cincinnati: University of Cincinnati Press, 1964.
- Salway, Peter. *The Frontier People of Roman Britain*. Cambridge: At the University Press, 1965.

- Sands, P.C. *The Client Princes of the Roman Empire under the Republic*. Cambridge Historical Essays, no. 16. Cambridge: At the University Press, 1908.
- Saxer, Robert. *Untersuchungen zu den vexillationen des römischen Kaiserreichs von Augustus bis Diokletian*. Epigraphische Studien, no. 1. Beihefte der Bonner Jahrbücher, no. 18. Cologne and Graz: Böhlau, 1967.
- Schleiermacher, Wilhelm. *Der römische Limes in Deutschland*. Limesführer. 3d ed. Berlin: Gebr. Mann, 1967.
- Scramuzza, Vincent M. *The Emperor Claudius*. Cambridge, Mass.: Harvard University Press, 1940.
- Seager, Robin. *Tiberius*. London: Eyre Methuen, 1972.
- Seston, William. *Dioclétien et la tétrarchie*. vol. 1. *Guerres et réformes (284-300)*. Bibliothèque des Écoles françaises d'Athènes et de Rome, fasc. 162. Paris: E. de Boccard, 1946.
- Sherwin-White, Adrian N. *The Roman Citizenship*. 2d ed. Oxford: At the Clarendon Press, 1973.
- . *The Letters of Pliny: A Historical and Social Commentary*. Oxford: At the Clarendon Press, 1966.
- Simpson, Grace. *Britons and the Roman Army: A Study of Wales and the Southern Pennines in the 1st-3d Centuries*. London: The Gregg Press, 1964.
- Sirago, Vito Antonio. *Galla Placidia e la trasformazione politica dell'occidente*. Université de Louvain. Recueil des travaux d'histoire et de philologie. 4e série, fasc. 25. Louvain: Publications universitaires, 1961.
- Smith, Richard Edwin. *Service in the Post-Marian Roman Army*. Manchester: Manchester University Press, 1958.
- Solari, Arturo. *La Crisi dell'impero romano*. 2 vols. Milan: Soc. Ed. Dante Alighieri, 1933.
- . *Il Rinnovamento dell'impero romano*. Milan: Soc. Ed. Dante Alighieri, 1938.
- Starr, Chester G., Jr. *The Roman Imperial Navy, 31 B.C.-A.D. 324*. Cornell Studies in Classical Philology, vol. 26. Ithaca: Cornell University Press, 1941.
- Stein, Ernst. *Histoire du Bas-Empire: De l'état romain à l'état byzantin (284-476)*. Vol. I [two parts]. Edited and translated by Jean-Remy Palanque. Paris: Desclée de Brouwer, 1959.
- . *Opera Minora Selecta*. Amsterdam: A. M. Hakkert, 1968.
- Stevenson, George Hope. *Roman Provincial Administration Till the Age of the Severi*. Oxford: Basil Blackwell, 1930.
- Syme, Ronald. *The Roman Revolution*. Oxford: At the Clarendon Press, 1939.
- Syme, Sir Ronald. *Tacitus*. 2 vols. Oxford: At the Clarendon Press, 1958.
- Thompson, E. A. *The Historical Work of Ammianus Marcellinus*. Cambridge: At the University Press, 1947.
- . *A History of Attila and the Huns*. Oxford: At the Clarendon Press, 1948.
- . *A Roman Reformer and Inventor: Being a New Text of the Treatise De Rebus Bellicis with a Translation and Introduction*. Oxford: At the Clarendon Press, 1952.
- . *The Early Germans*. Oxford: Clarendon Press, 1965.
- . *The Visigoths in the Time of Ulfila*. Oxford: At the Clarendon Press, 1966.
- Tovey, Lieut.-Col. Hamilton. *Elements of Strategy*. London: Eyre and Spottiswoode, 1887.
- Vignerot, Paul. *Le Cheval dans l'antiquité gréco-romaine, de guerres médiques aux grandes invasions: Contribution à l'histoire des techniques*. Annales de l'Est, mémoires no. 35. Nancy: Faculté des lettres et de sciences humaines, 1968.
- Walter, Eugene Victor. *Terror and Resistance: A Study of Political Violence*. New York: Oxford University Press, 1969.
- Warmington, Brian H. *The North African Provinces from Diocletian to the Vandal Conquest*. Cambridge: Cambridge University Press, 1954.
- Watson, G. R. *The Roman Soldier*. London: Thames and Hudson, 1969.
- Webster, Graham. *The Roman Imperial Army of the First and Second Centuries A.D.* London: Adam and Charles Black, 1969.
- Wells, Colin Michael. *The German Policy of Augustus: An Examination of the Archaeological Evidence*. Oxford: At the Clarendon Press, 1972.
- Wheeler, Sir R. E. Mortimer. *Rome Beyond the Imperial Frontiers*. London: G. Bell and Sons, 1954.

- White, Donald A. *Litus Saxonicum: The British Saxon Shore in Scholarship and History*. Madison: University of Wisconsin Press, 1961.
- White, Lynn Townsend, ed. *The Transformation of the Roman World: Gibbon's Problems after Two Centuries*. Berkeley: University of California Press, 1966.
- Wilkes, J. J. *Dalmatia: History of the Provinces of the Roman Empire*. London: Routledge and Kegan Paul, 1969.
- Winspear, Alban D., and Geweke, Lenore K. *Augustus and the Reconstruction of Roman Government and Society*. University of Wisconsin Studies in the Social Sciences and Philosophy, no. 24. Madison: University of Wisconsin Press, 1935.
- Zancan, Paola. *La Crisi del Principato nell'anno 69 D.C. R.* Università di Padova. Pubblicazioni della Facoltà di Lettere e Filosofia, vol. 16. Padova: Dott. Antonio Milani, 1939.

## III

## Unpublished Works

- Gordon, Colin D. "The Subsidization of Border Peoples as a Roman Policy of Imperial Defense." Ph.D. diss., University of Michigan, 1948. (LC microfilm AC-1, no. 1105.)
- Kaltenbach, Philip E. "Non-Citizen Troops in the 'Roman Army.'" Ph.D. diss., Johns Hopkins University, 1948.
- Minor, Clifford E. "Brigand, Insurrectionist and Separatist Movements in the Later Roman Empire." Ph.D. diss., University of Washington, 1971.
- Moscovich, Maurice James. "The Role of Hostages in Roman Foreign Policy." Ph.D. diss., McMaster University (Canada), 1972.
- Petersen, Hans E. "Governorship and Military Command in the Roman Empire." Ph.D. diss., Harvard University, 1953.
- Wade, Donald W. "The Roman Auxiliary Units and Camps in Dacia." Ph.D. diss., University of North Carolina, 1969.
- Uspensky, Th. I. "Military Organization of the Byzantine Empire." Typescript. Translated by J. Krenov, from Bulletin of the Russian Archaeological Institute at Constantinople, vol. 6. Sophia [Bulgaria], 1900. W.P.A. No. 3888, 1941. O.P. 165-1-93-11. [L. of C.].

## IV

## Collective Works

1. Congresses of Roman Frontier Studies (in chronological order).  
[Third] Congress of Roman Frontier Studies, 1949. Edited by Eric B. Birley. Durham: Durham University Registrar, 1952.  
Carnuntina: Ergebnisse der Forschung über die Grenzprovinzen des römischen Reiches, Vorträge beim internationalen Kongress der Altertumsforscher Carnuntum, 1955. Edited by Erich Swoboda. Römische Forschungen in Niederösterreich, vol. 3. Graz and Cologne: Hermann Böhlau Nachf., 1956.  
Limes Romanus Konferenz, Nitra. Slovenskej Akadémie vied Bratislava. Bratislava: Slovenskej Akadémie, 1959.  
Quintus Congressus Internationalis Limitis Romani Studiosorum [Fifth Congress]. Acta et Dissertationes Archaeologicae. Zagreb: Arheološki Radovi i Rasprave III, 1963.  
Corolla Memoriae Erich Swoboda Dedicata. Römische Forschungen in Niederösterreich, vol. 5. Graz and Cologne: Hermann Böhlau Nachf., 1966.  
Studien zu den Militärgrenzen Roms: Vorträge des 6. Internationalen Limes Kongresses in Süddeutschland. Beihefte der Bonner Jahrbücher, vol. 19. Cologne and Graz: Böhlau, 1967.  
Roman Frontier Studies, 1967 [7th Congress]. Tel Aviv: Students' Organization, 1971.
2. Others (by editor or title).  
Applebaum, Shimon, and Gichon, Mordechai. *Israel and Her Vicinity in the Roman and Byzantine Periods*. Tel Aviv: Tel Aviv University Press, 1967.  
Bell, Roderick; Edwards, David V.; Wagner, Harrison. *Political Power: A Reader in Theory and Research*. New York: The Free Press, 1969.

- Bibaw, Jacqueline, ed. *Hommages à Marcel Renard*. 3 vols. Collection Latomus, vol. 102. Brussels: Latomus, 1969.
- Brisson, Jean-Paul, ed. *Problèmes de la guerre à Rome*. École pratique des hautes études-Sorbonne 6 section: Sciences économiques et sociales. Centre de recherches historiques civilisations et sociétés. 12. Paris and The Hague: Mouton and Co., 1969.
- Butler, Ronald M., ed. *Soldier and Civilian in Roman Yorkshire: Essays to Commemorate the Nineteenth Centenary of the Foundation of York*. Leicester: Leicester University Press, 1971.
- Cambridge Ancient History. Gen. ed. John B. Bury. Vols. 10, 11, 12. Cambridge: At the University Press, 1934-1939.
- Caprino, C.; Colini, A. M.; Gatti, G.; Pallottino, M.; Romanelli, P. *La Colonna di Marco Aurelio*. Rome: L'Erma di Bretschneider, 1955.
- Centre national de la recherche scientifique. *Les Empereurs romains d'Espagne*. Colloques internationaux du centre national de la recherche scientifique. Paris: Éditions du centre national de la recherche scientifique, 1965.
- Chevallier, Raymond, ed. *Mélanges d'archéologie et d'histoire offerts à André Piganiol*. École pratique des hautes études—VIe Section Centre de recherches historiques. 3 vols. Paris: S.E.V.P.E.N., 1966.
- Grimes, W. F., ed. *Aspects of Archaeology in Britain and Beyond: Essays Presented to O. G. S. Crawford*. London: H. W. Edwards, 1951.
- Howard, M., ed. *The Theory and Practice of War: Essays Presented to Captain B. H. Liddel Hart*. London: Cassell, 1965.
- Proceedings of the XIII International Congress of Byzantine Studies*. Edited by J. M. Hussey, D. Obolensky, and S. Runciman. Oxford: At the Clarendon Press, 1967.
- Mélanges Marcel Durry: Revue des études latines*. Vol. 47 bis. Paris: Soc. d'édition "Les Belles Lettres," 1969.
- Millar, Fergus; Berciu, D.; Frye, Richard N.; Kossack, Georg; Talbot, Rice Tamara. *The Roman Empire and its Neighbours*. London: Weidenfeld and Nicolson, 1967.
- Renard, Marcel, ed. *Hommages à Albert Grenier*. 3 vols. Collection Latomus, vol. 58. Brussels: Latomus, 1962.
- Temporini, Hildegard, ed. *Aufstieg und Niedergang der Römischen Welt: Geschichte und Kultur Roms in Spiegel der neueren Forschung* [A.N.R.W.] Berlin and New York: Walter de Gruyter, 1974.

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