

The Geography of Power

Studies in the Urbanization of Roman
North-West Europe

Tønnes Bekker-Nielsen

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CONTENTS

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1.	<u>The Problem</u>	1
2.	<u>The Town</u>	4
3.	<u>In Search of a Method</u>	9
4.	<u>The Sources</u>	14
5.	<u>Urban Networks in Italy and Gaul, First Century AD</u>	20
6.	<u>The Development of the Urban Network in Gaul</u>	33
6.1	Narbonese Gaul	33
6.2	The Western and Maritime Alps	35
6.3	Eastern Gaul	36
6.4	The Rhineland	37
6.5	Northern Gaul	38
6.6	Central and Western Gaul	39
6.7	South-Western Gaul	40
6.8	Summary	43
7.	<u>Changes in the Urban Pattern: Causes and Effects</u>	44
8.	<u>Urban Patterns and Economic Development</u>	52
9.	<u>Conclusion: The Geography of Power</u>	65
	<u>Notes</u>	69
	<u>Bibliography</u>	76
	<u>Appendix I</u>	
	The Cities of Italy in the First Century AD	85
	<u>Appendix II</u>	
	The Cities of Gaul in the Early First Century AD	99
	<u>Appendix III</u>	
	The Cities of Gaul in the Late Fourth Century AD	103
	<u>Maps</u>	109
	Key to map 5 and 6	117
	Index to maps	121

THE PROBLEM

Nec situs originesque persequi facile est.

Pliny, NH 3.46.

In most societies, the exercise of power and authority takes place through a complex network of relations between individuals and groups. Viewed as a whole, this network may be visualized as a three-dimensional structure and, in everyday terminology, a centralized and hierarchic society such as the Roman Empire is often referred to as a pyramid. Strictly speaking, of course, a cone would be a more correct metaphor.

Such structures may be studied in several ways. A vertical section may be taken through the pyramid, exposing the levels within the hierarchy, the channels through which authority is delegated, and the relationships between superiors and subordinates. In short, this approach seeks to lay bare the vertical relations within the pyramid.

Another approach is based on a horizontal section through the pyramid, exposing the relationships between elements at a given level of authority.

Studies of the political and administrative structure of the Roman Empire have generally followed the former approach, focussing on the relationships of provinces, cities, and lesser towns to each other. The following study, however, is based on the alternative approach and has as its starting point a cross-section of the pyramid at the regional level. The regional level will be defined as that immediately below the provincial, the level where the prime agents of Imperial power in the civilian sphere are the urban administrative institutions of the self-governing communities: coloniae, municipia and other 'cities' (civitates, oppida in the West; poleis in the East) with their dependent territories. Obviously, there are other agencies of Imperial authority at this level as well, but - at least in the part of the Empire studied here - the self-governing 'cities' are indispensable for the administration and fiscal exploitation of the provinces.

The key position of the city within the power structure of the Roman Empire is due to several factors. Three important ones may be summarized as follows:

1. The ancient conception of the town as polis
2. The interdependence of political and economic control
3. The formation of the Empire within an urbanized milieu

Central to any discussion of the town in classical antiquity is the idea of the polis, variously and unsatisfactorily translated as 'city', 'state', or 'city-state'. Ideally, the Greek polis enjoyed political autonomy and economic autarchy. Politically, the city and its territory together formed a sovereign state. Economically, too, city and rural territory formed an entity. Where modern economists and sociologists will tend to view town and country as distinct entities, separated or even antagonized by divergent interests, in the classical view they are complementary and inseparable parts of the polis.

Though they enjoyed a considerable measure of self-government under the early Empire, a civitas of Normandy or a colonia in the Po valley were never sovereign states, while the 'allied' cities of Southern Italy or the poleis of Asia Minor had long since lost all claims to political independence. In this respect, the provincial Roman town was no 'city-state'. But within the framework of the Roman Imperial administration, town and country did form a whole. A man could reside in the backwoods of Western Gaul, far from the town from which his land was governed, but nonetheless be a citizen of that town - just as a resident of Ephesus, Arles or York could enjoy full 'Roman' citizenship even if he had never set foot in the city of Rome.

This basic difference between ancient and modern views of the town and its place in the country is of fundamental importance in any attempt to apply modern geographical models to the Roman world; indeed in any interpretation of the spatial structure of the Roman Empire. The difference is clearly brought out when the polis concept is compared with the Medieval view of the city: here, the cities (at least as seen by their inhabitants) formed islands in a vast and often hostile sea of rural territory, and the city was legally (and often politically) sharply distinguished from the land outside the city walls. The famous legal axiom that "city air makes free" (Stadtluft macht frei) is unthinkable in the context of second-century Roman Germany or Gaul.

Tradition, then, is one factor defining the place of the Roman town in society; function is another. In any society, effective political control is maintained only by effective control of the economy: and this, in turn, is easier to achieve if the agencies of authority are located at the nodes of economic activity. Major economic centres (with their concentrations of wealth and, ultimately, power) are potential trouble spots if left to themselves, outside the range of administrative surveillance.

Within the Roman Empire, towns forming economic nodes at the regional level normally also functioned as regional administrative centres and as extensions of the Imperial fiscal apparatus. A similar congruence of economic nodes and political centres can be observed in other societies, e.g. late Imperial China (1). The process of urbanization itself will often lead to a 'natural' state of congruence between patterns of economic activity and patterns of political authority, but unless society remains perfectly static, the economic pattern may have to be adapted to changing political patterns, or vice versa, in order to maintain congruence.

Finally, the forms of Roman authority must be seen against the background of Roman history. When the great wars of annexation began in the third century BC, towns were already a long-established feature of the Mediterranean landscape. That existing urban centres should form the bases of Roman administration was only natural, the more so since the Romans often succeeded other rulers whose authority had likewise been exerted through the towns.

In short, the idea of the polis played a large part in shaping the rôle of the town within the structure of Imperial power, but practical considerations and the advantage of linking Roman administration to

existing political structures played their part as well. The importance of practice as compared to theory may be seen from Roman behaviour in areas where they found no established urban network on which to base their administration. In some cases, e.g. in Africa, urban networks of colonies would seem to have been created e vacuo; in others, such as Gaul or Britain, pre-Roman tribal territories were chosen as the foundation of an administrative structure based on civitates. Yet other instances of departures from 'normal' Roman practice can be found in Egypt or in the Balkans.

THE TOWN

The word 'town' is used to describe a variety of settlements, differing in size, shape, population density, internal layout and appearance. Yet, in our everyday use of the word, distinguishing between towns and 'non-towns' appears to be a simple matter. But once the question of a precise definition is raised, it turns out to be less simple than expected: a large number of agglomerations (forts, monasteries, mining villages, prisons, work camps) have some of the traits generally assumed to be characteristic of a 'town', yet obviously do not qualify as towns.

In the present context, we may leave aside the subtler problems and content ourselves with a shorthand definition of a town as a permanently and densely inhabited settlement where a significant segment of the population is engaged in non-agricultural activity. Further, there must be reciprocal economic relations between the inhabitants of the settlement and the population outside. 'Dense' and 'significant' are obviously relative terms: a population density which was high for ancient Rome will be low for modern-day Chicago, and while a non-agricultural segment of, say, 20% may have been typical of many Roman towns, it would be very low for most European towns. Finally, we should note that while most of the towns to be discussed below will be 'cities', i.e. settlements formally defined as urban by the Roman administration, the legal status of a settlement forms no part of the definition of a 'town'.

The existence of reciprocal economic relations with the surrounding area indicates that the town is a 'central place', i.e. a settlement where 'central' functions are provided for the use of the population outside as well as inside the town. In fact, one could consider dispensing with the term 'town' altogether and using 'central place' instead.

'Central places' form the subject of the Central Place Theory, first formulated sixty years ago by the German geographer Walter Christaller (1933). The applicability of Central Place Theory (CPT for short) to Roman urbanization has been disputed, especially in the wake of Ian Hodder's attempts at introducing CPT into the study of Roman Britain (1970, 1972), and scepticism still appears to be a prevalent attitude among ancient historians as well as archaeologists (e.g. Reece (1986)). Obviously, CPT as used today has not been tailored to the needs of ancient history or historical geography, but to those of modern economic geography; and the highly sophisticated models generated for use in the context of industrialized societies have as little to tell us about Roman towns as the models used in motorway planning have to tell us about Roman roads.

Yet, just as the motorway is essentially a road, the Roman town is essentially a Central Place. Unlike the approach used by another founding father of CPT, August Lösch (1940), Christaller's basic model does not presuppose an industrialized society. It can be applied to traditional societies as well: in fact, one of the classic CPT studies, quoted

in several textbooks, deals with the pre-industrial and pre-automobile marketing patterns in the Chinese province of Szechwan (Skinner (1964)).

Since the 'central functions' crucial to Christaller's classical version of CPT are largely found within the sphere of services, administration, transport, finance, and trade, it is not the industrial revolution but rather the transport revolution a century later which marks the watershed between 'modern' and 'pre-modern' stages in the development of the central place network. This, combined with the strong resistance to change characteristic of most settlement patterns, means that quite recent CP studies (Brush and Bracey (1955), Singh (1965), Johnson (1970), Mahn (1980)) may provide valuable material for comparison with the settlement patterns found in Roman contexts.

Still, it would be misleading to replace the term 'town' with 'central place'. Given the limitations of our evidence, we know too little about most Roman towns to define their functions as central places with certainty. In this study, then, 'town' as defined above will be used when dealing with urban settlements in general, 'central place' only when discussing Roman towns in the context of Central Place Theory and its derivatives.

Roman towns as central places

CPT and the ancient idea of the polis share a fundamental concept: the vision of the town and its territory as complementary parts of a single whole. In CPT, one usually does not speak of town and territory, but of center and hinterland. The center, i.e. the central place, is defined as such by virtue of its central functions: the functions (services, goods) which the inhabitant of the hinterland will not find anywhere but in a center. The central function is rarely unique: the country dweller may find it in other towns as well but, according to the law of minimum effort, will normally seek it in the town which is nearest to his place of residence, measured in terms of the time needed to make the journey rather than in terms of absolute geographical distance.

The size of the hinterland is determined by the range of the functions located in the center. The range is defined as the maximum distance that a country dweller will cover in order to avail himself of a given function. Beyond this distance from the center, country dwellers will either choose some other center closer to their place of residence or forgo the function (service, good) altogether. In the former case (a competing center takes over) the relative range or limit has been reached; in the latter case, the absolute range.

Centers of lesser importance, lower-order centers, tend to have functions of lesser range, while more important towns, higher-order centers, have the same functions as the lower-order centers and, in addition, some functions of a greater range. This means that the hinterland of the higher-order centers will, as far as some functions are concerned, include that of neighbouring lower-order centers.

Certain factors tend to place lower-order centers at a disadvantage in relation to nearby higher-order centers, even where functions (goods,

0 Type of center	1 Status	2 Admini- stration	3 Religion Enter- tainment	4 Service	5 Artisans Local trade	6 Marketing	7 Transport Long-distance trade	8 Army
PROVINCIAL CENTER	Provincial capital	Governor Procurator Mint	Provincial sanctuary Archbishop				Major sea-port	Legionary HQ
REGIONAL CENTER	<u>Civitas</u> - capital Municipium Colony	Town council Tax collector	<u>Capitolium</u> Amphitheatre Cathedral	Doctor Lawyer School- master	Goldsmith Plumber Mosaic workshop	Permanent market	Minor port Major road junction	Fort Military workshop
LOCAL CENTER	Vicus (if any)	<u>Vicus</u> council (if any)	Temples Theatre Church	Baths Prostitute	Joiner Carpenter Mason Potter Oil and wine dealers	Periodic market	River-port Ferry crossing Road-station (<i>'mansio'</i>)	Minor fort Military depot
VILLAGE			Sanctuaries Shrines	Bath-house	Blacksmith	Itinerant traders	Ford Road-station (<i>'mutatio'</i>)	Milecastle Signal- station

Table 2.1. The hierarchy of centers in a Roman province: a schematic overview.

IN SEARCH OF A METHOD

services) of low range are concerned. First, a country dweller will not undertake one journey to town for each item or service he needs, but will try to lump a number of errands together on one journey. His choice of destination will depend on the item or service that is most difficult to obtain. If five out of six purchases can be made in the nearby village (lowest-order center) but the last only in a market town (higher-order center), chances are that all purchases will be made in the market town. Second, higher-order centers are more likely to form nodes in the highway network, and since the effort of the peasant in going to and from the town will normally be measured in hours rather than miles, a longer journey on good roads may be preferable to a shorter journey across country. Finally, higher-order centers with administrative, judicial or political functions may, for that reason, be perceived as 'important' towns. In CPT, one does not speak of 'importance', but of 'centrality': a center has a high degree of centrality if it has functions with long ranges, while the lower-order center with its short-range functions has a low degree of centrality. This aspect, i.e. centrality as defined in the terminology of CPT, should preferably be termed 'objective centrality' in order to distinguish it from the 'perceived' or 'subjective' centrality of a town.

What, if any, message, does all this hold for the study of Roman urbanization? Can Roman towns be fitted into CPT's scheme of higher-order and lower-order centers, of greater and smaller hinterlands, great and small ranges of services? Table 2.1 provides some of the answers. Given the limited extent of our evidence, it should be considered only as a tentative sketch of the urban hierarchy in a Roman province of the West, not as a precise delineation of the structure of administration, services, or other activities in Roman towns.

In the far left-hand column, towns and villages have been divided into four groups: provincial centers, regional centers, local centers and villages. Across, eight columns indicate the various spheres of activity. In each column, the position of some functions in relation to the levels of the urban hierarchy has been indicated.

Obviously, other considerations beside ease of access play a rôle in the location of functions: and as one progresses across the table from column 1 to column 8, these other factors play a progressively greater rôle. The hierarchy of status (1) and administration (2) quite faithfully reproduce the hierarchy of higher-order and lower-order centers predicted by CPT; at the other end of the scale, transport hierarchies (7) are obviously for a large part dictated by the conditions of physical geography: ports and fords will not always be congruent with centers at the appropriate levels of the urban hierarchy. Finally, the military command structure (8), while faithfully conforming to the hierarchical pattern, has its own rules of geographical location and will only very rarely show a pattern congruent with that of marketing or civilian administration. The table shows, however, that it can be meaningful to speak of the Roman urban hierarchy in the terms of CPT.

To gain an impression of the spatial structure of Roman regional administration, one may plot all known self-governing communities ('cities') on a map of the Empire. One example of such a map, taken from N.J.G. Pounds (1973), is shown as figure 3.1. It is not entirely accurate, though, since some 'small towns', i.e. towns which were not self-governing communities but formed part of the territory of neighbouring cities, have been included. Even so, it clearly conveys an impression of the great variations in urban density: from the thickly clustered cities of central Italy, Greece and southern Spain to the empty spaces of central Gaul, western Spain or the Alpine regions. This variation clearly requires further investigation; and such investigation cannot be undertaken merely by visual comparison of maps. It will be necessary to find some kind of numerical indicator to express the urban density and its variations.

Our map shows the urbanized Empire as a scatter of points, that is, of cities. It could just as well show a mosaic of spaces: i.e. the territories or hinterlands surrounding each city. In fact, if our aim is to investigate the principles underlying the location of cities, then the hinterland, not the city itself should be at the centre of attention, since the shape and extent of the hinterland is the prime factor determining the location of a city as well as its place in the urban hierarchy.

Assuming that a city is placed in the middle of a vast, featureless plain, its hinterland will theoretically form a perfectly circular area, with the town at the center of the circle. The radius of this circle will correspond to the range of the highest-order good offered in the city. The extent of the hinterland (the area of the circle) will be determined by two factors: minimum area and maximum radius of the circle.

Since the city - the central place - is to maintain itself economically through interaction with its hinterland, the hinterland must have a certain minimum area. This minimum cannot be defined in absolute terms: it will depend, inter alia, on the population density and economic development of the hinterland. However, there will always be a minimum requirement which the area of the hinterland must meet in order to support a city.

Returning to the concept of the hinterland as a circular area, minimum extent may be translated into minimum radius. The area of a circle is calculated by multiplying the square of the radius by π (approximately 3.14), which means that a circular hinterland with a radius of 6 kilometres will have an area of about 113 square kilometres. A circle with a radius one-third of this, i.e. 2 km, will have an area of 12.5 km, or only one-ninth of the first circle. When the radius is reduced, the area of the circle is rapidly diminished; this sets a lower limit to the radius. In real life, where hinterlands are not perfectly circular but irregular in shape, there will still be a connection between the distance from the center to the limits of the hinterland and the total area of the hinterland

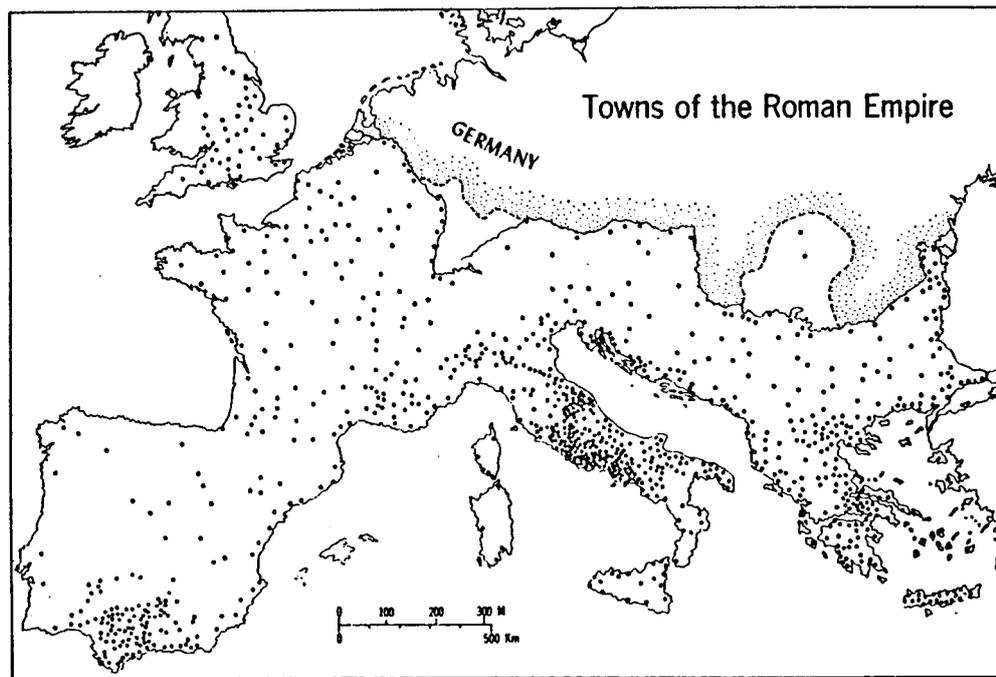


Fig. 3.1: Towns of the Roman Empire, from Pounds (1973) fig. 3.6.

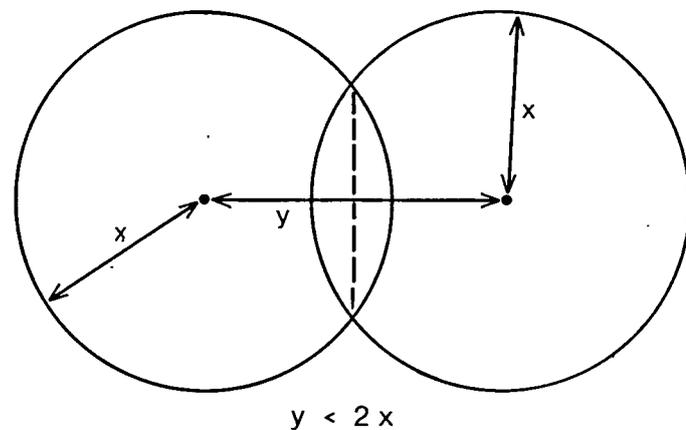


Fig. 3.2: Overlapping urban hinterlands

- but the relation of one to the other will not be as simple as in the example given here.

On the other hand, there will be an upper limit to the extent of the hinterland as well; this is set by the maximum radius of the circle, which equals the range of the highest-order functions in the town: the distance (measured in journey time) that any resident of the countryside will cover in order to obtain the goods or services offered in the city.

If two cities of the same order, i.e. placed at the same level of the urban hierarchy, and offering the same functions, were placed beside each other on the featureless plain so that their hinterlands were contiguous at only one point, the radius (range) determining the extent of their hinterlands would be equivalent to exactly half the distance between the two cities. In real life, the hinterlands of neighbouring cities will tend to overlap, and the circles "nest" to form polygonal areas. In this case, part of the plain will be within the range of both cities. The limit between their hinterlands will be equidistant from the two cities and in the area where the hinterlands overlap, the relative range of each will be less than the absolute range (cf. figure 3.2).

As we have seen, there is a close connection between the distance between two cities (intercenter distance), their range, and the extent of their hinterlands. Accordingly, the density of the urban "scatter" may be expressed either as the average area of the hinterlands or as the average intercenter distance between their cities.

A simple method is to delimit an area, e.g. a province, measure its land area and divide this figure by the number of cities. By this means, Nissen (1883) calculated that in Liguria, each Verwaltungskörper (city) had, on average, an area of 800 square kilometres as its hinterland. This approach, however, will yield only rough averages for a number of cities, no individual values for each city. If a province includes districts of high population density as well as mountainous or semi-arid regions, this important information may be lost.

To obtain individual values for each city, it might in theory be feasible to reconstruct the limits of a city's hinterland, then calculate its area. In practice, the reconstruction of Roman hinterlands is fraught with problems, unless the city in question happens to be located on an island or in a remote mountain valley. Literary or epigraphical sources usually provide only sporadic information, while the distribution of distinctive types of archaeological material, e.g. pottery or floor mosaics, may give us an indication of the range of specific functions, but no clear picture of the economic hinterland as a whole.

Instead of the actual limits, one might settle for the theoretical limits of the hinterland. These are not difficult to delineate as, according to the law of minimum effort, the line of demarcation between two hinterlands will follow a line that is equidistant from their centers. When many such lines are combined to form a map, the result is a pattern of polygonal cells, so-called Thiessen polygons. If the area within each cell is measured, a numerical indication of the extent of the hinterland of each city is obtained.

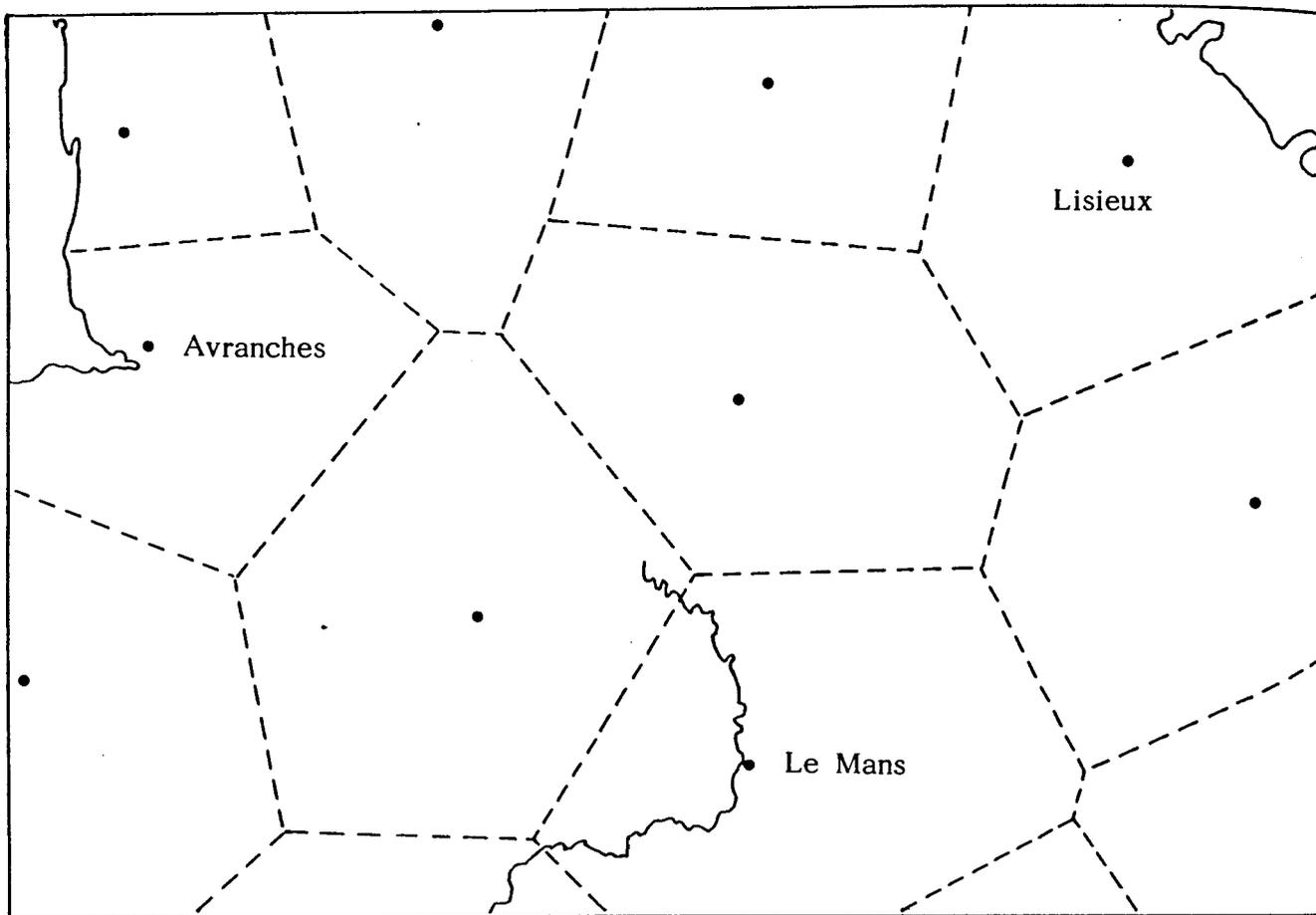


Fig. 3.3: Theoretical hinterlands in Normandy

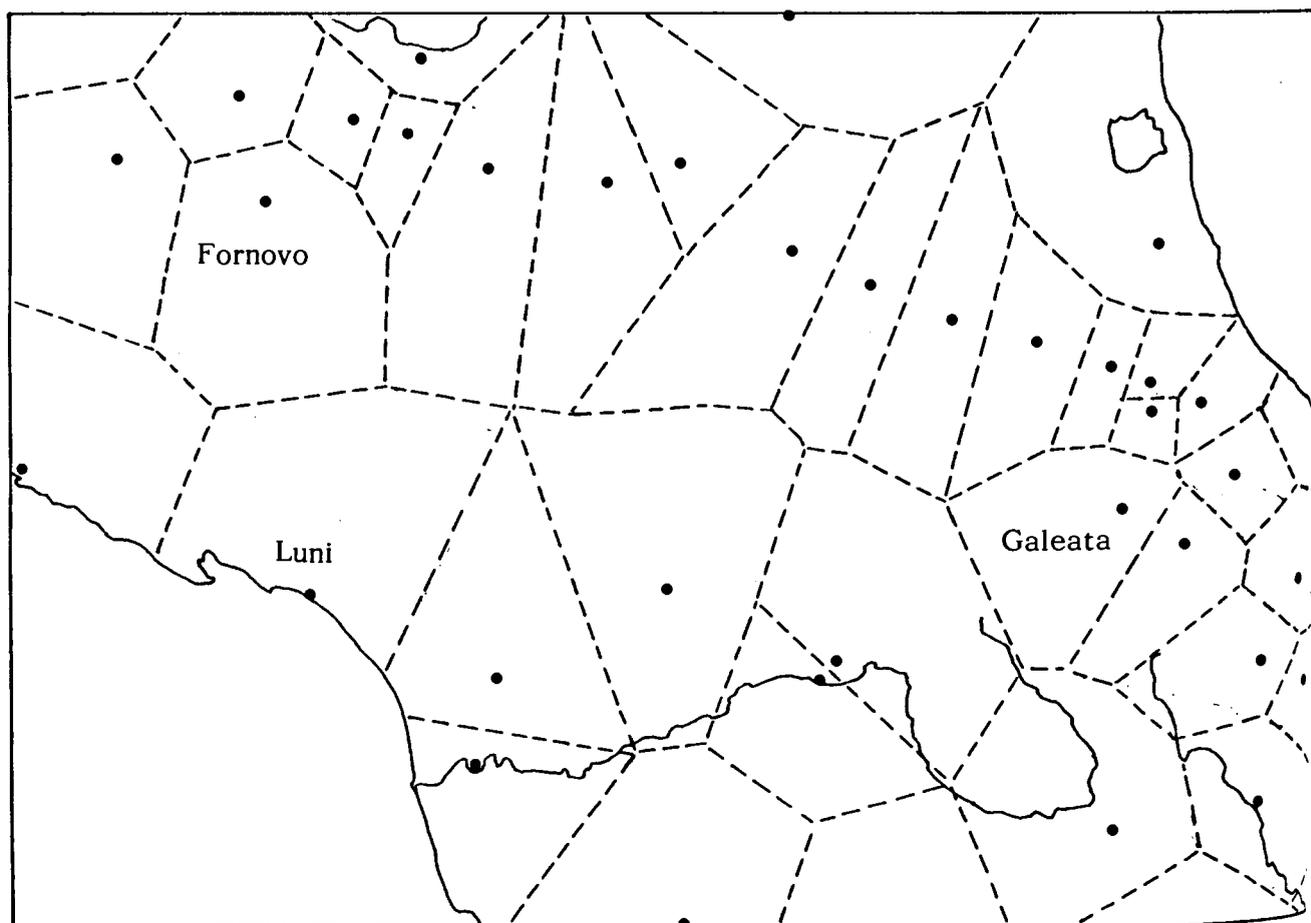


Fig. 3.4: Theoretical hinterlands in the northern Apennines

In some cases, this approach will provide us with a fair picture of the actual hinterlands, especially in regions with few natural obstacles (mountains, estuaries, lakes, forests) and a fairly regular pattern of cities (e.g. north-west France, shown in figure 3.3). Where the distribution of towns is skewed or clustered due to the presence of natural obstacles or transport corridors, the resulting map of hinterlands will reveal shapes and sizes that do not, from a common-sense point of view, appear credible (e.g. in the northern Apennines, figure 3.4). In some areas, hypothetical limits drawn according to theoretical principles will be at variance with likely natural boundaries following mountain ridges or river courses.

A third possibility is to leave the question of hinterland areas aside and concentrate on intercenter distances. Compared to the approaches sketched out above, this one has the advantage that it is not based on reconstructed data: hinterland limits may be unknown, but the location of cities is known in the vast majority of cases - and could, if need be, easily be verified by archaeological survey.

Intercenter distances may be calculated by measuring the distance - as the crow flies - from one city to its nearest neighbour, or to its two, three or four of its neighbours. By taking numerous measurements from each city, the effect of 'abnormal' cases (two cities located on opposite banks of a river, for example) is reduced, but the problems encountered in dealing with cities in isolated locations, for instance at the tip of a promontory, are increased. Taking a varying number of measurements is unacceptable on methodical grounds: the number of measurements must be the same for all cities studied.

In the following, we will limit the number of measurements to two: from a city to its nearest neighbouring city and to its second-nearest neighbouring city. The intercenter distance is expressed as the average of these two measurements. By comparing intercenter distances in different regions and provinces, we hope to obtain a clearer picture of the variations in urban density throughout northwestern Europe and, perhaps, to be able to interpret these variations in the context of economic development, historical background and the exercise of power.

THE SOURCES

Among the literary sources for the history of the Roman Empire, there are few which do not include the name of at least one town or village. Some give the names of several settlements, and a few give lists of all towns within a region or province. Only three authors, however, attempt to cover the entire Empire: Pliny, Strabo, and Ptolemy. All three describe the situation between 30 BC and AD 150. For later periods, we have no comparable source covering the entire Empire, though compilations or city-lists exist for individual provinces or dioceses. One such list is the Notitia Galliarum, presumably of the late fourth century AD, covering Gaul and Germany. Unfortunately, no similar list for fourth-century Italy has been preserved.

In the context of the present study, the choice of sources is limited even further by the need for information not only on the name and location of a town, but on its status as well: whether it is a 'city' or simply a 'small town'. Most sources do not provide this information at all, and even in the systematic listings of urban settlements found in Strabo, Pliny and Ptolemy, this information may be either lacking or obviously unreliable. From comparison and combination of several sources, however, it is possible to establish a set of tolerably reliable city-lists for Gaul and Germany, while for Italy, we may rely on Pliny for the outlines of the urban pattern, though his city-lists for certain regions (notably region II) pose great problems and remind us that one should perhaps not base too wide-ranging interpretations on Pliny's information in cases where it cannot be corroborated by other sources.

Strabo

The Geography of Strabo comprises 17 books and was completed sometime within the first two decades AD. Its aim is to describe the whole known world according to certain preconceived editorial, philosophical and geographical guidelines described by the author in the first two books of his work. Books three and four cover the western European provinces of the Roman Empire, books five and six Italy, while central Europe is dealt with in book seven.

In common with other ancient geographical writers, Strabo draws heavily on information found in other works. In the case of books 3 to 6, he expressly quotes Polybius and Posidonius of Apamea (2), but what other works he may have used, and to what extent, remains a controversial matter (3). It seems reasonably certain that, in addition to material culled from other sources, the Geography contains much information from contemporary informants or first-hand observations by the author himself (4). In the case of Italy, a good deal of the geographical information may be based on personal observation, but for western Europe, this possibility is ruled out by Strabo's statement that he has never been there (5).

The books are subdivided into regional descriptions, each giving a conspectus of cities and tribes within the region, with a running historical and ethnographic commentary. The city-lists are not intended to be exhaustive: in his preface, Strabo compares the Geography to a large painting, where the overall impression counts more than the accuracy of every tiny detail (6). In book three, a group of small Spanish tribes is dismissed by Strabo as too unimportant to merit attention (7). In his selection of material for inclusion, Strabo is highly ethnocentric: Latium is dealt with at greater length than northern Italy, Narbonese Gaul alone takes up more space than the Three Gauls combined, and the description of Greece fills three whole books (books 8 to 10).

Pliny

The Natural History of Pliny the Elder was probably completed in 77 AD, only two years before the death of its author. Among the 37 books of the NH, four (books 3 to 6) deal with geography, attempting to describe the whole world. The description follows the coastline of the continents, starting (in book 3) at the Pillars of Hercules and working eastward along the northern shore of the Mediterranean: southern Spain, southern Gaul and Italy. By the end of book 4, we have reached the northern fringe of Europe with the Rhineland, the British Isles, the Three Gauls, and finally, Spain.

Each subsection is disposed according to a similar system: first, the coastline is described in detail with its towns, estuaries and promontories; second, a list of inland cities is provided. Ethnographic, historical or geographical comments are interposed in the coastal description, while the inland description is usually confined to the city-list itself.

We know that Pliny drew on a wide selection of earlier writings, among which was some kind of official city-list, survey or 'Reichsstatistik' (to use the phrase of Kornemann (1901))(8). No doubt this is what Pliny is alluding to when he gives divus Augustus as one of the authorities drawn upon for the contents of books three and four. Augustus is also mentioned in the preface to the description of Italy, where Pliny explains how he will organize his description according to Augustus' division of Italy into eleven regions (9).

We do not know how closely the city-lists of Pliny reproduce these official lists. In all likelihood, the inland city-lists have mostly been lifted en bloc from the official listings: this is what our knowledge of Pliny's modus operandi would lead us to expect (10). It is supported by the fact that the inland lists are usually arranged alphabetically - just as the official lists were (11). Even so, they have not always been copied verbatim from the official list: in some cases, Pliny converts tribal names into names of cities, or vice versa. Further, all lists had to be gone over at least once in order to eliminate those cities which had already been mentioned once in the course of the coastal description. Finally, since Pliny's geographical divisions did not always agree with those of his source, it has sometimes been necessary to combine several lists into one (12).

In the description of Italy, the structure of Pliny's text is plainly visible and the process by which he reached it can be reconstructed with a fair degree of certainty. Other sections of book 3 are structured in a similar manner, but it does not follow - as argued by Sallmann (13) - that they are based on the same type of sources and arranged by means of a similar editorial process. It is true that the descriptions of Spain, Narbonese Gaul and Italy as they now stand have several points in common; but there are fundamental divergencies as well. Obviously, when arranging his material, Pliny will have tried to standardize his presentation as much as possible: if divergencies remain in the final text, they must stem from the divergent nature of the sources. It would be absurd to suppose that Pliny drew on a standardized type of source throughout, then consciously changed his material around to produce not just variety, but even disorder in his presentation.

If we accept - as most scholars do - that the Italian sections are based on official lists, we may go on to assume that the description of Spain in book 3 draws on official city-lists as well, but of a somewhat different type: this is attested by the division of the country into conventus. Further, it is obvious that this source, with the cities arranged by conventus, was used for the description of 'outer' Spain in book 4 as well. There is no trace of the conventus list in Pliny's description of Narbonese Gaul (book 3), nor in the section on the Three Gauls (book 4).

Like the description of Spain which precedes it and the description of Italy which follows, the description of Narbonensis has been edited to form two distinct parts: first, the coastal description, second, the inland city-lists. The latter, however, are marred by breaks in the alphabetical sequence and in addition name a considerable number of 'cities' or tribes that cannot be verified from any other sources. There is a parallel to this phenomenon in book 5, where a number of unimportant settlements have been listed as oppida civium Romanorum (14). The logical explanation is that Pliny did not have official city-lists at his disposal when drawing up the description of Narbonensis; instead, he was forced to rely on other types of lists where no distinction was made between cities and unchartered towns. As we shall see below (chapter 6), these lists are likely to have been itineraries.

Judged on its literary merits, Pliny's description of the Mediterranean provinces is greatly inferior to Strabo's, but as evidence for the urban pattern of these areas, it is much superior. Where Strabo has edited his text and interspersed a wide variety of comments, Pliny - as he makes clear in the editorial statement at the beginning of book 3 - is content with giving the names of tribes and cities. And where Strabo has selected the most noteworthy settlements from his sources, Pliny has normally aimed at producing exhaustive lists. It is expressly stated in the text that some towns have been omitted in southern Spain (15), Tarraconensis (16), Narbonensis (17) and the Alps (18), but the fact that Pliny bothers to mention these omissions indicate that they represent deviations from his editorial ground rule.

In their treatment of the 'outer', non-Mediterranean provinces of Gaul, the relationship between the two authors is altogether different.

For Gaul proper, the lists of Pliny and Strabo are very similar. This does not, however, prove that they are based on a common source, only that each of the authors had some fairly reliable list of Gallic cities at his disposal. The reason that Strabo's lists of Gallic cities show greater resemblance to Pliny's lists than his lists of Italian cities is simple: with his limited first-hand knowledge of the Three Gauls, Strabo could not - or dared not - make a selection of the most noteworthy places: instead, he let the lists stand as they were. Where he found these lists remains a matter of conjecture: in his text, there is no internal evidence for his use of an official city-list or 'Reichsstatistik'. It is just as likely that he used some other type of source, for example a copy of the inscription in the Sanctuary of the Three Gauls at Lyon, where the names of sixty Gallic tribes (i.e. cities) were engraved. This inscription is, in fact, mentioned elsewhere by Strabo (19).

To sum up, the lists of Pliny may be considered our primary source for the urban pattern of the first century AD as regards the Italian peninsula. This is not to say that they could not have been better: there are, for instance, several cases of duplication (cities appearing in more than one regional list), and the large number of unidentified towns in Apulia is also a cause for concern. For the Three Gauls, Pliny's lists, supported by those of Strabo, would seem to give a credible picture of the urban network.

This cannot, unfortunately, be said for Narbonensis, the Germanies or the extreme south-west of Gaul. Here, Pliny's lists are obviously not to be trusted on their own, and a list of cities will have to be reconstructed from the scraps of evidence found in other texts: in Strabo, inscriptions, and in later literary sources.

The most important of these later sources is the Geography of Ptolemy, written in the second half of the second century AD. It comprises eight books, of which six (books 2 to 7) contain a description of the world: not in prose, in the manner of Pliny or Strabo, but as a collection of tables giving names of geographical points (towns, mountain peaks, estuaries, promontories) with their geographical coordinates. These tables are meant to serve as the basis for a scientific map of the world according to the cartographic principles set out in book 8.

From the prefatory remarks in book 1, it is clear that Ptolemy draws heavily on an earlier work by Marinus of Tyre (20). Presumably, Ptolemy has corrected and amended the text of Marinus by means of information found in other writings, such as coastal periploi and road itineraries. For although the geographical coordinates of every point listed could, in theory, be verified by astronomical observation, this has obviously not been done. Most coordinates have been interpolated by means of distances given in itineraries or other sources.

Ptolemy wished to produce what we would describe as a physical rather than an administrative map, and we should not expect him to pay much attention to the status of a settlement. Most of the places named are in fact cities, but some are not: he sometimes gives the names of several settlements within one civitas, though only one can have been the civitas-capital (21). Similarly, his use of terms such as kolonia or polis should not always be taken at face value. Information on the status of settle-

ments will not normally have been found in itineraries, and even if available, this information may not have been kept up to date as settlements changed their status.

Since Ptolemy required information on distances between towns in order to calculate his geographical coordinates, we may safely assume that itineraries played an important rôle among the sources at his disposal. We know that itineraries were extensively used in antiquity, indeed, were probably the only type of 'highway map' available (22), yet comparatively few have survived. The most comprehensive collection of itineraries is the Antonine Itinerary, which reflects the state of affairs in the late third century AD (23). Its structure is simple: we are given a number of lists, each describing a journey (iter). Every name on the list carries an indication of the distance from the preceding town on the route, usually in Roman miles, occasionally in Gallic leagues.

From our point of view, the Antonine Itinerary suffers from two drawbacks. One is that the status of towns is very rarely given. The other is that the lists, taken as a whole, do not offer an exhaustive survey of the cities of the Roman Empire. Large areas, such as most of Asia Minor, are not covered at all; there are also blank spots in the Balkans and in western Gaul. In eastern Gaul, Italy and Britain, by contrast, the coverage is very good indeed.

Coverage is even more limited in the Bordeaux itinerary which describes a journey from Bordeaux to Jerusalem and back, ostensibly undertaken in 332 AD (24). It only contains settlements located on the route travelled to and from the Holy Land, but has the advantage of distinguishing between actual cities (civitates) and road-stations (mutationes, mansiones).

For Italy, we possess no complete survey of cities other than those already mentioned, only fragmentary lists for specific regions, e.g. the Libri coloniarum. For Gaul, we have what appears to be a complete list of chartered towns in the so-called Notitia Galliarum. From the early Middle Ages onward, the Notitia functioned as a list of bishoprics, copied and amended to include new sees or changes within the ecclesiastical organization. This use of the Notitia, however, does not in itself prove that the Notitia was originally conceived and written down as a list of Gallic bishoprics. The structure of late Roman ecclesiastical and secular administration is largely congruent, and so is the terminology, e.g. civitas for bishopric. The Notitia may well be a survey of the secular administration which the Church has taken over for its own use. This was the view of Duchesne (1892), Nesselhauf (1938) and Jones (1964), whereas Mommsen (1885) and Rivet (1976) have argued for the ecclesiastical origins of the Notitia.

Much of the argument hinges on the enigmatic mention of a few sites identified as castra and, in one case, portus. This terminology, whatever its significance, does not fit easily into an ecclesiastical context, but neither do these sites appear to be logical candidates for inclusion in a secular city-list.

Jill Harries (1979) proposes a solution which places the Notitia proper, i.e. the civitas-lists without the (presumably) later additions of castra and portus, in a secular context: the reign of Magnus Maximus in Gaul

(AD 383-388). The castra and the single portus, then, are later additions, probably of the sixth century, when the Notitia was already in use as a list of Gallic bishoprics. Though this hypothesis may not clear up all the problems (where, for instance, does the Portus Bucini, otherwise unknown, fit into a series of episcopal sees?) it certainly merits serious consideration. For the purposes of the present study, we will accept the Notitia Galliarum as a secular list of the cities of Gaul in the late fourth century AD or, failing that, a list of bishoprics reflecting the secular administrative structure of late Roman Gaul. In either case, the Notitia is a very important source indeed for the study of Roman urbanization.

URBAN NETWORKS IN ITALY AND GAUL,
FIRST CENTURY AD

Based on the sources mentioned in the preceding chapter, it is possible to reconstruct city-lists for each of the eleven Augustan regiones of Italy as well as for each of the original four provinces of Gaul, showing the state of affairs prevailing in the first half of the first century AD. As previously indicated, the Gallic lists may be reconstructed with a fair degree of certainty by a critical comparison of Pliny's and Strabo's lists; for Italy, we have to rely on Pliny alone and must allow for a higher degree of uncertainty, partly due to the defects of the lists themselves, partly to the problems involved in identifying and locating a number of the towns or tribes mentioned by Pliny. However, the number of unidentified or spurious place-names in the lists should be viewed in relation to the total: more than 300 Italian towns have been satisfactorily located. Only for one regio, the second, is the proportion of unidentified cities so great that it materially affects the conclusions which may be drawn from our study of the urban network of the area.

Appendix I gives the names of 334 Italian cities which can be located with any degree of certainty and appendix II the names of 90 Gallic cities. If these 424 cities are plotted on the map of Europe, the distance from each city to its two nearest neighbours can be measured and the intercenter distance for each region or province calculated as outlined in chapter 3. Taking the average intercenter distance for each region or province, we get the results shown in table 5.1.

Region/province	Number of cities (n)	Average intercenter distance	Range
I (Latium, Campania)	71	11.0	5 - 21
II (Apulia)	39	19.6	10 - 37
III (Lucania, Bruttium)	21	35.0	20 - 57
IV (Samnium)	36	17.3	8 - 28
V (Picenum)	19	13.6	7 - 25
VI (Umbria)	40	13.0	5 - 27
VII (Etruria)	39	20.6	8 - 49
VIII (Aemilia)	22	18.7	6 - 39
IX (Cispadana, Liguria)	16	26.0	14 - 56
X (Venetia)	19	35.7	20 - 60
XI (Transpadana)	12	35.6	24 - 55
Narbonensis	26	37.6	21 - 76
Aquitania	15	90.4	64 - 140
Lugdunensis (Celtica)	25	66.3	36 - 129
Belgica	24	70.7	37 - 122

Table 5.1 Intercenter distances in Italy and Gaul, first century AD. The Alpes Graiae et Poeninae, comprising two cities, have not been treated as a separate province. The Alpes Graiae are included in the figures for Gallia Narbonensis and the Alpes Poeninae in those for Gallia Belgica.

As the third column of the table shows, the range of variation is great: intercenter distances vary from 5 km (for Ariccia in Latium) to 140 (for Bourges in Aquitania). When the values for individual towns are grouped by regions, the variation is still considerable, from 11.0 km (average intercenter distance for all cities in region I) to 90.4 km (for all cities in Aquitania). It is also evident that, on the whole, intercenter distances tend to increase as distance from the imperial capital increases: the regions surrounding Rome have the lowest averages, while the highest averages are found in the three "outer" provinces of Gaul. To gain a clearer picture of this correlation, we may rank the regions according to their average intercenter distance, as in table 5.2.

Rank	Region/province	Average intercenter distance
1	I (Latium, Campania)	11.0
2	VI (Umbria)	13.0
3	V (Picenum)	13.6
4	IV (Samnium)	17.3
5	VIII (Aemilia)	18.7
6	II (Apulia)	19.6
7	VII (Etruria)	20.6
8	IX (Cispadana, Liguria)	26.0
9	III (Lucania, Bruttium)	35.0
10	XI (Transpadana)	35.6
11	X (Venetia)	35.7
12	Narbonensis	37.6
13	Lugdunensis	66.3
14	Belgica	70.7
15	Aquitania	90.4

Table 5.2 Regions and provinces ranked by average intercenter distance, first century AD.

In this table, the pattern is clearly visible: regions of low intercenter distance are primarily found in central Italy, regions of medium intercenter distance (such as III, X and XI) on the periphery of Italy, and areas of high intercenter distance in the Three Gauls. A distribution map of Italian towns with intercenter distances below or above 20 km (figure 5.1) illustrates the same point, but adds further detail to the picture. On the map, we observe the same general tendency as in table 5.2, but also that the correlation between distance from Rome and intercenter distance is not perfect: there are areas of low intercenter distance on the "heel" of the peninsula, while conversely, there are enclaves of high intercenter distances in the Abruzzi, not far from Rome.

Comparing figure 5.1 with table 5.2, we are able to explain some of the apparent aberrations in the ranking of provinces in table 5.2. For instance, one might have expected region VII (Etruria), bordering on the city of Rome itself, to have a lower average intercenter distance than region VIII (Aemilia) beyond the Apennines. As the map shows, the low average intercenter distance of region VIII is primarily due to the clustering of cities along the via Aemilia (25). Similarly, the quite high average

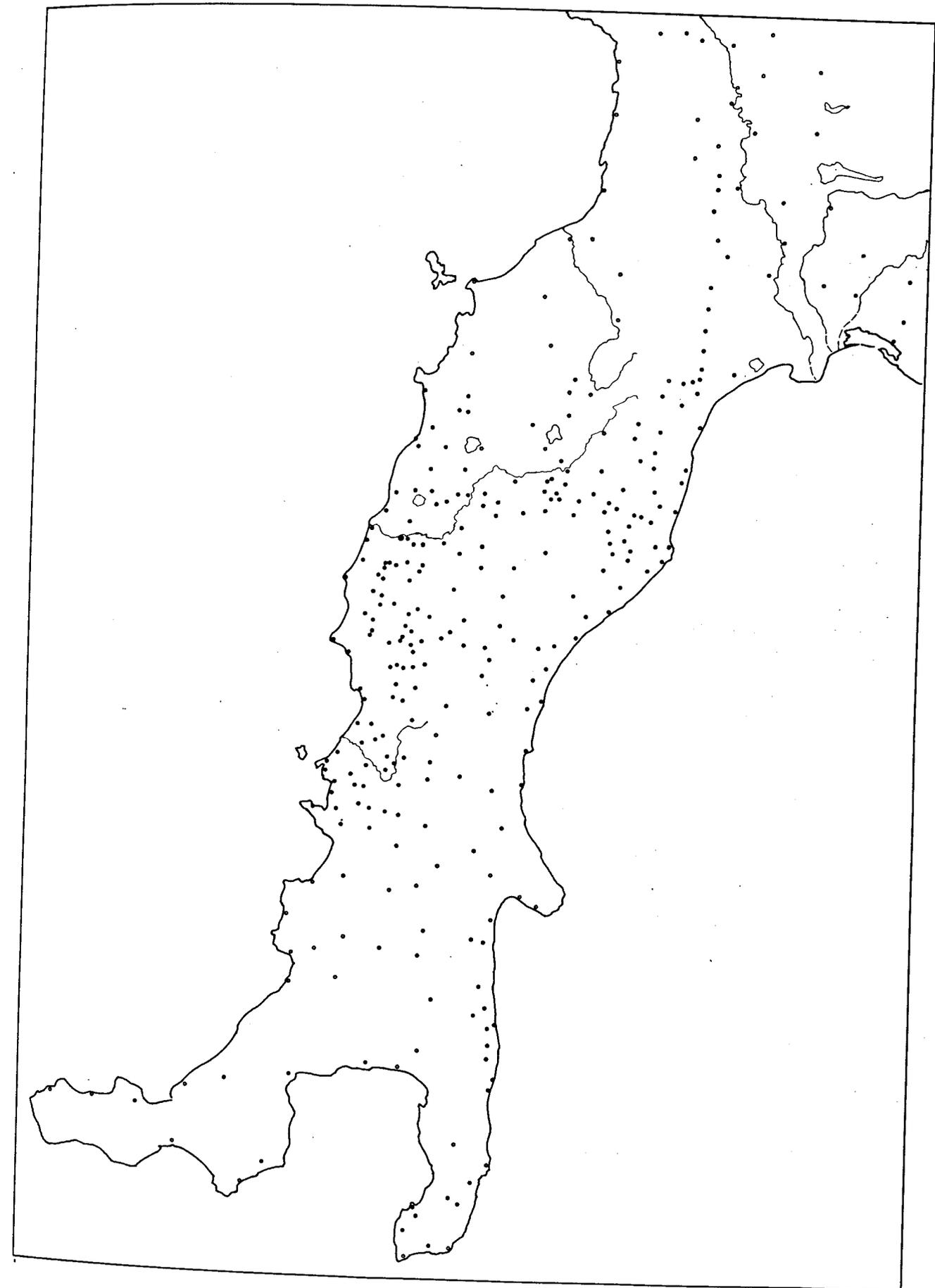


Figure 5.1: Intercenter distances for Italian cities, first century AD.
Open circle: > 20 km. Black circle: < 20 km.

for region VII actually masks a wide intra-regional variation. In the northern part of the region, roughly corresponding to the modern Regione Toscana, cities are widely spaced; south of Lake Bolsena, we find a denser urban pattern with intercenter distances well below 20 km. In a like manner, one may distinguish two types of urban pattern within region IV: a dense urban network in the north-west, greater intercenter distances in the south-east. Finally, it seems that region II (Apulia) contains enclaves marked by very low intercenter distances on the Adriatic side of the heel of Italy, though the extent of these enclaves is difficult to estimate.

Turning from Italy to Gaul, similar phenomena are observed. As one would expect, the province nearest to Rome (Narbonensis) has the lowest average intercenter distance, but again, the correlation is not perfect: the second lowest average is found in the most distant province (Lugdunensis). Furthermore, the wide range of variation within each province shows that the average, as in the case of Etruria, masks a combination of areas with different degrees of urban density within one province.

Within Narbonese Gaul, cities are closely spaced in the lower Rhône valley and along the coast east of Marseille; the western section of the coast, the upper Rhône valley and the Maritime Alps show greater intercenter distances, varying from 34 to 76 km. In Aquitania, the south and east are characterized by intercenter distances which are great by Italian standards (64 to 81 km) but moderate when compared to conditions in western and northern Aquitania. In Lugdunensis as in Narbonensis, the greatest intercenter distances are found at the periphery of the province, while within Belgica, the eastern area - which was later to become the Germanies - has the highest intercenter distances, save for the small (and statistically hardly significant) enclave around Speyer and Worms.

Dividing regions II, VI, VII and VIII into two parts each, and similarly dividing all four Gallic provinces, the result is a total of 23 sub-divisions (table 5.3). Ranking these by average intercenter distance produces table 5.4. From this table, we are able to define four distinct types of urban pattern. The first, characterized by very low intercenter distances, prevails in central Italy. The second, with medium intercenter distances, is prevalent in southern Italy, Cisalpine Gaul and the lower Rhône valley. The third, characterized by large intercenter distances, is found in southern Gaul and along the English Channel. Finally, the fourth, with ultra-large intercenter distances, is primarily observed in central and western Gaul. For ease of reference in the following, we may term these four types A, B, C and D. Table 5.5 summarizes the definition of each type, and figure 5.2 shows their geographical distribution in Italy and Gaul. It is worth noting how areas belonging to a "type" form bands or spreads stretching across regional or provincial boundaries, even across major physical barriers, e.g. between Transalpine and Cisalpine Gaul, or between Cisalpine Gaul and central Italy.

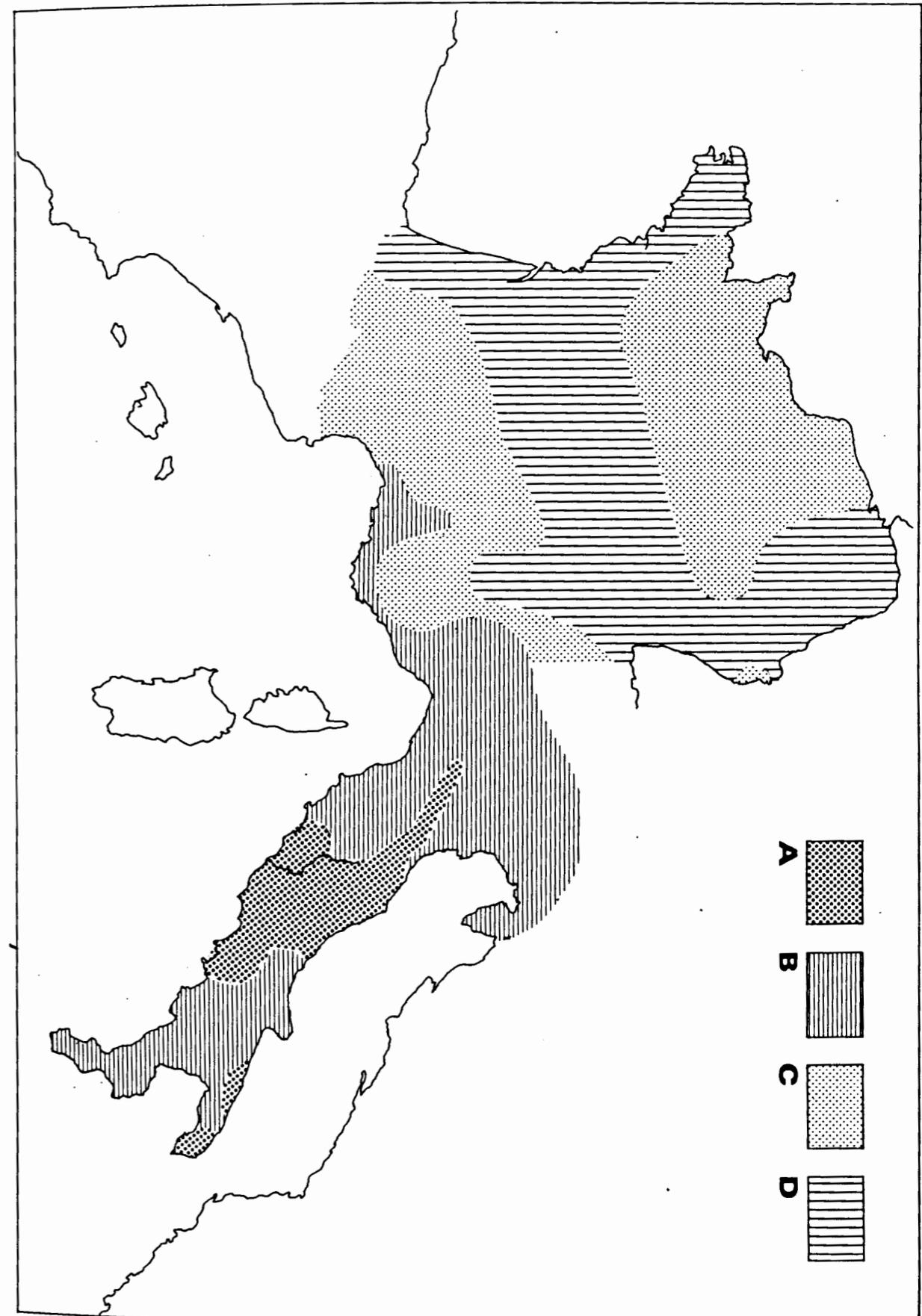
Area	Number of cities (n)	Average intercenter distance	Range
I (Latium, Campania)	71	11.0	5 - 21
Ila (southern Apulia)	18	15.2	10 - 25
Ilb (remainder)	21	23.3	19 - 37
III (Lucania, Bruttium)	21	35.0	20 - 57
IVa (southern Samnium)	8	22.8	15 - 28
IVb (northern Samnium)	28	15.8	8 - 27
V (Picenum)	19	13.6	7 - 25
VI (Umbria)	40	13.0	5 - 27
VIIa (southern Etruria)	23	13.5	8 - 28
VIIb (northern Etruria)	16	30.8	10 - 49
VIIIa (via Aemilia corridor)	14	15.3	6 - 20
VIIIb (remainder)	8	24.9	17 - 39
IX (Cispadana, Liguria)	16	26.0	14 - 56
X (Venetia)	19	35.7	20 - 60
XI (Transpadana)	12	35.6	24 - 55
Na (central Narbonensis)	18	29.0	21 - 43
Nb (periphery)	8	56.8	43 - 76
Aa (south/east Aquitania)	7	71.0	64 - 81
Ab (north/west Aquitania)	8	107.4	89 - 140
La (central Lugdunensis)	20	57.7	36 - 87
Lb (periphery)	5	100.4	93 - 129
Ba (south/west Belgica)	17	55.6	37 - 84
Bb (north/east Belgica)	7	107.4	92 - 122

Table 5.3 Intercenter distances by areas, first century AD.

Rank	Area	Average intercenter distance	Range
1	I	11.0	5 - 21
2	VI	13.0	5 - 27
3	VIIa	13.5	8 - 28
4	V	13.6	7 - 25
5	IIa	15.2	10 - 25
6	VIIIa	15.3	6 - 20
7	IVb	15.8	8 - 27
8	IVa	22.8	15 - 28
9	IIb	23.3	19 - 37
10	VIIIb	24.9	17 - 39
11	IX	26.0	14 - 54
12	Na	29.0	21 - 43
13	VIIb	30.8	10 - 49
14	III	35.0	20 - 57
15	XI	35.6	24 - 55
16	X	35.7	20 - 60
17	Ba	55.6	37 - 84
18	Nb	56.8	43 - 76
19	La	57.7	36 - 87
20	Aa	71.0	64 - 81
21	Lb	100.4	93 - 129
22	Bb	107.4	92 - 122
23	Ab	107.4	89 - 140

Table 5.4 Areas ranked by average intercenter distance, first century AD.

Figure 5.2: Urban patterns in Italy and Gaul, first century AD



Type	Average intercenter distance	Geographical distribution	Area designation in table 5.3 - 5.4
A	11 to 16 km	Central Italy Via Aemilia Apulia	I, IIa, IVb, V, VI, VIIa, VIIIa
B	21 to 37 km	Northern Italy Southern Italy Southern Gaul	IIb, III, IVa, VIIb, VIIIb, IX, X, XI, Na
C	50 to 75 km	Southern Gaul Northern Gaul	Nb, La, Aa, Ba
D	> 90 km	Central Gaul Western Gaul Rhineland	Ab, Lb, Bb

Table 5.5 Urban patterns in Italy and Gaul.

The average values given in the second column of table 5.5 indicate the interval within which the average intercenter distance for one of the 23 areas will fall. However, it would be more relevant to know the average intercenter distance for all cities assigned to a given "type" of urban pattern. These figures are as follows:

Type	Number of cities (n)	Average intercenter distance
A	213	13.1 km
B	139	29.8
C	52	58.5
D	20	105.7

Table 5.6 Average intercenter distances by type of urban pattern.

A closer look at the figures in the right-hand column of table 5.6 reveals that the average intercenter distance for all cities within the areas defined as type C is about twice the corresponding value for type B, while

the value for type B is somewhat more than twice that for A. This relationship may be entirely coincidental, but it may also reflect the presence of a limiting factor common to all three, or all four, types of urban pattern.

If such a limiting factor exists, it is likely to be linked with the factors determining the radius of the circle forming the hinterland (page 9 above) since the extent of the hinterland is directly linked to the intercenter distance (page 11). As indicated above, when two circles of equal size are contiguous at only one point, the intercenter distance will be twice the radius of either circle. But such cases are atypical: more likely, the circles will overlap each other as in fig. 3.2, and their radius will be greater than half the intercenter distance. In addition, one must keep in mind that the intercenter distances in tables 5.1 to 5.6 are based on measurements taken between a city and its two nearest neighbours; there will be other neighbours (according to Central Place Theory, there will ideally be six) located farther away.

In order to estimate the theoretical radius of a city's hinterland (i.e. the range of its central functions) from the figures in table 4.6, we must try to compensate for these problems. It is suggested that the figures should be increased by 25%. Accepting this, the average range (or radius) of all cities assigned to one of the four "types" can be estimated as half the average intercenter distance multiplied by 1.25 = the intercenter distance multiplied by .625. Applying this formula to table 5.6, we obtain the results shown below:

Type	Radius	Radius, rounded to nearest km
A	8.2 km	8 km
B	18.6	19
C	36.6	37
D	66.1	66

Table 5.7 Average theoretical radius of the hinterland (range) by type of urban pattern.

Of course, these are only rough indications of the theoretical radius of a city's hinterland (the range of a regional center) for each of the four types of urban pattern. To avoid overemphasizing their accuracy, the figures have been reduced to round numbers in the right-hand column. Even so, the results deserve further consideration. If they actually reflect the range of central functions or the average distance from a city to the limits of its hinterland, then it should be possible to relate them to other known factors influencing the location of human settlement.

The obvious suggestion is that the figures are linked to the concept of time distance, i.e. distance measured in terms of time spent en route. In fact, the average value for type B, 19 kilometres, is about equal to half a day's travel: four hours' journey on foot or by horse-drawn wagon. A man on horseback might cover a greater distance in four hours, but in the Roman world, the man on horseback was more likely to be a trooper or imperial courier than a villager or farmer on his way to the nearest town. Generally, 19 km is what could reasonably be covered in four hours. Living within this distance of a city, the country dweller could rise early, visit the city, transact some business there and be home by nightfall.

Pursuing this idea further, 37 km would equal a whole day's journey, while 8 km would represent a quarter of a day's journey. Next, we have to explain how different limiting factors - "modules", modern planners might call them - applied in different areas of Italy and Gaul. This question must obviously be related to the question of urban functions.

In central Italy, where type A is dominant, many agriculturists will have had their place of residence in the city, going out to their fields at the start of every workday - as they still do in large tracts of central and southern Italy. Cities were not only centers of exchange and administration but also of residence and, in pre-Roman and Republican times, of refuge. These functions impose a limit of 1 to 2 hours' journey time on the radius - and thus on the extent - of the hinterland.

This is not to suggest that the spacing of Roman towns in Italy or elsewhere is the product of conscious planning, using "modules" of a given size. For one thing, the state of ancient geographical knowledge would not allow such planning; for another, the urban patterns of Italy and Gaul go back to pre-Roman times. These patterns are the products of a slow, evolutionary process, influenced by political as well as economic factors, which generally favours those towns whose hinterlands are nearest to the optimum extent for a given set of functions at the cost of those which have hinterlands too small to support them or too large to control effectively. The fairly regular pattern which we observe is the result of inter-urban competition through generations, and the pattern tends to grow more regular as the urban system of an area gradually approaches a state of equilibrium.

While the agriculturists of the "type A" landscape could, at least in theory, choose to live in the city itself or not, this choice would not be open to all agriculturists in a landscape of type B. Those working on land within about ten kilometres of the city might choose to live in the city itself; those working farther away would need to have their residence on the land (perhaps in a village or minor urban settlement). However, they could go to town and participate in the political, economic or religious activities taking place there, since it was possible to visit the city and return home in the course of a single day. Cities were thus centers of exchange and administration, perhaps also of religion, even if they did not serve as centers of residence and refuge for the entire hinterland.

Where towns are located according to a type C pattern, the distance from outlying districts to the urban center will rule out the possibility of a return journey within a single day. On the other hand, it is still possible for all country dwellers to make the trip either to or from the city in one day. For a small farmer with few goods to sell or few errands of importance in the city, such journeys will be undertaken only rarely, if at all. The cost of transport may nearly equal the revenue gained, and there is also the inconvenience and expense of staying in the city overnight to consider. Two-day return journeys will probably have been motivated mainly by the wish to participate in political or religious functions, or the need to fulfil obligations imposed by the state, e.g. in connection with taxation or the census.

While type A and B are found in Italy, type C appears to be a provincial phenomenon. It probably reflects pre-Roman structures of spatial authority, since the territories of Gallic tribes were, broadly speaking, fossilized as Roman administrative units when the Three Gauls were divided into civitates. Thus, what type C shows us is in fact a pre-Roman society, a 'heroic' society where the ruling elite - Caesar's equites - would meet a few times yearly to elect leaders, dispense justice or prepare for war. On these occasions, the participants will have spent days or weeks at the tribal center, and it was of little importance whether the journey there required two hours, half a day or a whole day. However, it might be an advantage that it did not require more than one day. In a heroic society, camping overnight in the territory of possibly hostile fellow-aristocrats was best avoided.

Finally, we come to type D. This type is found in central Gaul, an area which in pre-Roman times was dominated by a few strong tribes such as the Aedui, tribes which were well on the way to establishing themselves as 'states' and which had extended their hegemony over smaller, neighbouring tribes. With the Roman annexation of the Three Gauls, these dominant tribes formed very large civitates, into which the dependent tribes were absorbed, losing their political identity. It may be hypothesized that the greater stability and internal coherence of these tribal territories permitted the political hinterland of their centers to extend beyond the limits of a day's journey; alternatively, power may have been exerted from subsidiary centers which found no place in the Roman scheme of administration.

In some cases, the large intercenter distances of type D do not appear to reflect political consolidation, but rather geographical fragmentation. Where type D patterns combine with large tracts of sparsely inhabited country in the Ardennes, the Eifel, the Vosges, the Massif Central or the Armorican massif, urban territories may well have been separated by intervening areas of what was, in effect, 'no man's land'. Another factor to bear in mind is the possible importance of pastoralism on the northern periphery of the Empire: pastoral, non-urbanized societies require - and are able to dominate - far larger territories than urbanized societies of the same size. Given only twenty examples of "type D" in our material (to which might be added some cases from the Iberian peninsula and a couple from northern Britain), it seems dangerous to generalize further on this point; it seems likely, however, that our "type D" actually masks several distinct sub-types.

The hypotheses presented above rest on certain assumptions concerning the length of a day's journey in Roman times. Before passing on to the next chapter, we may briefly review the evidence, ancient or comparative, for the length of a normal day's journey and its fractions.

Our main source, obviously, must be the itineraries. In the Bordeaux itinerary, a day's journey typically covers some 20 to 30 Roman miles, i. e. 30 to 45 kilometres. In the Antonine Itinerary, compiled for official travellers who could have their horses changed regularly at the stations of the cursus publicus, the figures are higher, ranging up to 35 or 40 miles. Comparative evidence from the Middle Ages seems to support the lower figures: in an exhaustive survey of medieval itineraries, Friedrich Ludwig gives the average length of a day's journey, calculated from itineraries of the 12th and 13th century, as between 25 and 45 kilometres (26).

The recent proposal of professor Walser (27) that a 'Normdistanz' of 25 Roman miles (37 km) was used in the planning of Roman roads, though obviously highly attractive for the arguments presented here, appears to be an example of retrospective standardization. If a 'Normdistanz' had been applied at the planning stage, we should expect road-stations to be spaced with greater regularity than is actually the case.

In a study of settlement patterns in Wisconsin and southern England in the 1950's, i.e. at a time when the full effects of motorization were not felt yet, Brush and Bracey calculated a 'mean intercenter distance' between towns of 21 English miles (34 kilometres); this would correspond to a theoretical hinterland radius of some 20 kilometres, with 40 kilometres as the maximum length of a 'normal' one-day return trip to the market.

Even closer parallels to the transport conditions and technology of the Roman Empire are provided by studies of pre-revolution China. An American survey of marketing patterns in the years 1929 to 1933 states that the average distance from farm to market was 18 kilometres for goods carried by mule, 11 kilometres for goods carried by wagon (28). In another survey of the same period, the maximum distance from farm to market was found to be about 23 kilometres (29).

Whereas these journeys commence at the farm and have the city as their destination, the quarter day's journey of central and southern Italy has the city as its starting point. Heinrich Nissen, writing before the advent of the bicycle, observed that Italian tenant farmers and day labourers often walked 8 to 10 kilometres each morning from the town to their place of work in the fields (30).

THE DEVELOPMENT OF THE URBAN NETWORK IN GAUL

6.1 Narbonese (Transalpine) Gaul

The history of urban life in France goes back at least as far as 600 BC, the traditional date for the foundation of Marseille, first of the Greek colonies on the Mediterranean coast (31). When southeastern Gaul was taken over by the Romans about 120 BC as the province of Gallia Transalpina, the settlements of the area formed two geographically complementary groups. One group consisted of the Greek colonies; these were all located at the water's edge, on the coast or near estuaries. The other group comprised a number of native urban or proto-urban settlements, mostly located inland.

Should the native settlements be considered towns according to the definition given in chapter 2? Some of the larger oppida, such as Ensérune or Entremont, appear to have been densely inhabited, planned, and, as far as the archaeological record can tell us, to have had 'central' functions (32). In the case of Toulouse, though the archeological interpretation has been controversial (33), literary sources indicate that Tolosa was probably a town; if not, a political center of considerable importance in the late pre-Roman period. These, however, are among the largest settlements in the area; many smaller ones were probably not urban in character, but simply rural centers of power, perhaps with an additional function as places of refuge.

Neither Ensérune nor Entremont survived as political centers into the Roman period; indeed, they did not even survive as towns. Soon after the Roman takeover, both were replaced by new foundations: Aix (Aquae Sextiae) 3 kilometres S of Entremont, founded in 122 BC, and Narbonne (Narbo Martius) 15 kilometres SW of Ensérune, founded in 118 BC. Toulouse, on the other hand, outside the immediate Roman sphere of interest, retained its political function and its urban status.

The Greek settlements fared differently. With their long-established central functions and their strong urban tradition, they no doubt had a far better grip on their economic hinterlands than Ensérune or Entremont. At the same time, the Romans took care to locate new Roman foundations at a decent distance from the Greek cities, Rome's allies of the pre-conquest period.

Unfortunately for the Greek cities, this considerate policy was reversed after the Civil War, in which Marseille sided with Pompey. After the city's surrender to Caesar's forces, it was stripped, so Caesar himself informs us, of most of its ancient privileges (34). The location of the colonies founded after the war clearly shows how the Roman attitude to the Greek cities of southern Gaul has changed: now, Roman settlements

are located in direct economic competition with Greek centers: Arles (Arelate) on the Rhône, near Greek Rhodanousia; Fréjus (Forum Julii) on the Greek-dominated coast between Marseille and Nice; Béziers (Baeterrae) near Agde (Agathe); Maritima (Martigues?) near Marseille itself. Conversely, though a Roman colony was established at the old native sanctuary of Nemausus, the Romans respected the rôle of Nîmes as a political center of the Volcae Arecomici and even retained its pre-Roman name. Apparently it was to the Gauls, not the Greeks that the Romans now looked for support. The same change of policy seems to be reflected in the titles granted to native settlements: Augusta Tricastinorum (St.-Paul), Apta Julia (Apt), Lucus Augusti (Luc).

Our knowledge of the state of the urban network of Narbonese Gaul in the decades following the Civil War and under the early Empire is somewhat sketchy, since neither Pliny nor Strabo provides us with a reliable list of cities in the area. As in other provinces, Pliny gives a list of inland cities in Narbonese Gaul. Most of these, so he says, are oppida latina: this indicates settlements of some importance and, presumably, size. Yet many are impossible to locate; they are mentioned neither by Strabo nor by Ptolemy, unknown to the epigraphical record and have not been identified archaeologically. Most scholars since Desjardins (1876) have rejected some of these 'cities' as spurious.

Apparently, Pliny's description of Narbonese Gaul is not based on official city-lists but on other material, which Pliny or his secretary has rearranged in as orderly a fashion as possible. These other sources will have included itineraries (or descriptions based on itineraries) giving the names of towns but no indication of their status. The result is the city-list preserved in the Natural History, where authentic oppida latina are intermingled with towns which did not have Latin status, at least one colony (Nîmes) and a number of minor settlements (35).

Pliny's use of itineraries explains several peculiarities, for example the inclusion of Cessero (St.-Thibéry) and Piscinae (Pézenas) in the list of cities. The centuriation of the colony of Béziers, to which they no doubt belonged, includes both Saint-Thibéry and Pézenas, as well as Agde, which had lost its independence before Pliny's time (36). The place-name Piscinae (The pools?) itself is hardly a suitable name for a settlement enjoying the privileged Latin status, but likely enough for a road-station on the highway from Béziers to Lodève (37). Cessero appears in the Bordeaux itinerary, where it is positively identified as a mansio, not a civitas (38); also in the Geography of Ptolemy (39), who does not mention Piscinae - presumably because he worked from a road-book which gave only the stations on the via Domitia itself, not those on the branch road to Lodève.

In his coastal description, Pliny names a number of other settlements. Among these, Cimiez and Antibes in the Maritime Alps, Fréjus, Marseille, Maritima, Narbonne and Ruscino are beyond doubt authentic first-century cities. Ruscino (Castel-Roussillon) was a Latin settlement according to Pliny (40); according to his contemporary, Pomponius Mela, it was a colony (41), but not according to Ptolemy (42). There is secure epigraphical evidence for chartered self-government of some kind at Ruscino (43). The

site of Maritima has not been identified with certainty, but is generally assumed to be in the neighbourhood Martigues (44). According to Pliny, this city was an oppidum (not oppidum latinum) and according to Ptolemy, a colony (45).

As far as it can be reconstructed, the urban network of Narbonese Gaul in the first century AD may be described as a group of cities forming a type B pattern in the lower Rhône valley, flanked on either side by groups of lesser density: to the east, the Maritime Alps and to the west, a type C group comprising Ruscino, Narbonne, Béziers, Lodève, and Toulouse. In the far north of the province, Vienne has a peculiarly equivocal status. On the one hand, it is very close to its nearest neighbour, Lyon; on the other hand, it is the capital of a large civitas-territory. As regards its place in the urban network, Vienne should be assigned to the type C pattern prevailing further to the west, in the Forez and Velay.

In contrast to the rapidly changing urban patterns of the first two centuries, the following centuries are a period of marked stability in the urban network of Narbonensis. Comparing the urban pattern of the first century with that reflected in the Notitia Galliarum, we find only few deviations.

Three towns are missing from the Notitia: Maritima, Ruscino, and Carpentras. As its name indicates, Maritima will have been a port city, and may have been deprived of access to the sea by the silting of the Rhône delta. As regards Ruscino, the coin lists from the site seem to indicate a slackening of activity in the Severan era (46). If this interpretation is correct, it may be connected with a loss of urban status - and, perhaps, with the apparent revival of nearby Elne in the following century. Similarly, Carpentras may have lost its colonial status in the course of the third or fourth century, devastated during one of the numerous civil wars or punished by one of the victors. While Carpentras is not mentioned in the oldest extant manuscripts of the Notitia, it reappears in later versions with the explanatory note nunc Vidausca, i.e. the episcopal see is 'now' (about AD 600) located at Venasque, some 10 kilometres SW of Carpentras (47).

6.2. The Western and Maritime Alps

Though the Alps are the part of Gaul nearest to Italy, they were also the last part of Gaul to come under effective Roman control. As late as 25 BC, a military campaign against the Salassi and the establishment of a colony (Aosta) were necessary to secure the passage over the Great St. Bernard pass from Italy into Gaul (48), and the monument of Augustus at la Turbie, proclaiming the final subjugation of the Alpine tribes, was not dedicated until 7/6 BC (49). Even then, one district retained nominal autonomy under king Cottius, whose territory was eventually transformed into a province (the Alpes Cottiae) by Nero (50).

The tardy conquest and romanization of the Alps meant a retardation of urban development as well: in the first century AD, cities were much scarcer in the Alps than in the lowlands of Gaul to the west. On the coast between Ventimiglia and Fréjus, there were two Greek cities, An-

tibes and Nice, and one Roman foundation, Cimiez. Cimiez was located inconveniently close to the ancient Greek settlement of Nice, just like some of the Roman colonies further west - and presumably for the same reason. Antibes, thanks perhaps to its exceptionally advantageous natural location, was left unmolested and granted Latin status (51).

In the mountains further north, Strabo mentions no settlements of any consequence, Pliny only two: Riez and Digne (52). Ptolemy has more, including the recently established civitas-capitals Embrun, Vence, Castellane and (probably) Senez (53). To these we may add Briancon (54) and Sisteron (55) which had in all likelihood attained the status of cities by the time of Ptolemy: Briancon as a municipium, Sisteron as a civitas-capital. By the late fourth century, the number of cities has increased even further and a mature urban pattern can be discerned, but developments have followed different courses in the southern part (the Maritime Alps) and the northern part (the Western Alps).

South of the 45th parallel, the urban pattern on the Gallic side of the Alps shows a density corresponding to that on the Italian side. Within the group of 13 cities (56), intercenter distances vary from 12 to 50 kilometres, with an average for the group as a whole of 27.6 km. This is clearly a type B pattern.

North of the 45th parallel, the ancient territory of the Allobroges, an enormous expanse of land between the Rhône and the Isère, originally formed a single civitas with Vienne as its capital. This arrangement appears to have been in force until the fourth century; then, presumably in the reign of Gratian, the area was carved up into three civitates governed from Vienne, Genève, and Grenoble respectively (57). Even then, the territory of each civitas was much larger than the average for Narbonese Gaul, to which the Allobroges belonged. The Alpine cities north of the 45th parallel, including the cities of Moutiers and Martigny (58), form an urban pattern of type C, with intercenter distances from 40 to 70 kilometres. Due to the proximity of Geneva to Nyon and of Vienne to Lyon, however, the average for the area as a whole is held down at 55 km, somewhat lower than normal for type C.

In other words, the Alpine lands south of the 45th parallel eventually developed an urban pattern similar to their neighbouring region on the east, northern Italy; those north of the parallel developed a pattern approximating that of their western neighbour, the Three Gauls.

6.3 Eastern Gaul

Eastern Gaul, broadly corresponding to Lorraine, Champagne, Burgundy, the Franche-Comté and the Lyonnais, was subjugated during Caesar's Gallic War of 58-52 BC. Shortly afterwards, colonies were established at two strategic points: Nyon (Noviodunum) near the western end of Lake Léman, and Lyon (Lugdunum) at the confluence of the Rhône and the Saône. The remainder of the urban network was, as in most of the Three Gauls, made up of civitas-capitals. The nearly identical city-lists of Pliny and Strabo (59) reveal an urban pattern reflecting the pattern of pre-

Roman tribal territories described in Caesar's Gallic War, as well as several civitas-capitals (Langres, Reims) directly descended from pre-Roman centers of power.

Like Vienne in Narbonese Gaul, the colony of Lyon and the civitas-capital of Feurs (Forum Segusiavorum) belong to a group of cities forming a type C pattern. Autun, Besancon and Langres belong to a type D group stretching across central Gaul to the west coast, while the cities further north form part of a type C pattern which includes parts of northern Gaul as well.

A comparison of the first-century lists with the Notitia Galliarum shows an increase in the total number of cities from twelve to fourteen. Three new civitates have been established, while one city - Feurs, the capital of the Segusiavi - has been struck off the list. Why this city, which received the title of colony towards the end of the first century (60) and is mentioned in the list of Ptolemy (61) has lost its status by the late fourth century, is obscure. Most likely, Feurs (like Vieux in Normandy, discussed below) fell victim to an administrative reshuffling which allowed the provincial capital of Lyon a much-needed expansion of its territory at the expense of the independent Segusiavi.

Turning to the new cities which appear in the Notitia, we might expect to find them in the southern, less densely urbanized area, but actually they are located in the north. In Champagne, Châlons-sur-Marne (Durocatalaunum) and Verdun (Virodunum) have been promoted to the status of civitas-capitals, probably in connection with a subdivision of the territory of the Remi. The third newcomer, Auxerre, is found where the road from Troyes to Bourges crosses the river Yonne and meets the highway from Autun to Sens: a focal point in the northern Gallic road network. Its territory seems to have been taken from the northernmost districts of the neighbouring civitas Aeduorum (62).

On the overall view, developments from the first to the fourth century AD brought no significant changes to the urban pattern of the southern half of this area; in the northern half, the existing type C pattern was 'filled in' and extended, bringing the average intercenter distance down to 56 kilometres, closely corresponding to the neighbouring area of northern Gaul with an average intercenter distance of 57.7 kilometres in the fourth century AD.

6.4 The Rhineland

Conditions for urban development in the frontier districts of Gaul - later known as the Germanies - were rather different from those found elsewhere in the Three Gauls. For one thing, a higher proportion of the cities were colonial foundations. For another, the area, from the Aar valley in the south to the Rhine delta in the north, is sharply delimited both towards the east (by the Alps and the Rhine itself) and towards the west (by the Jura, Vosges, Hunsrück, Eifel and Ardennes): in effect, it forms a narrow north-south corridor where the preconditions for an articulated network of towns and cities are absent.

Due to these factors, and to the military importance of the area, a civilian administration based on civitates does not appear to have been established until a fairly late date. Strabo gives only a few names of tribes or towns in the area (63); Pliny gives a great number of names (64), but as most do not reappear in other sources as names of civitates, we may suppose that they were not taken from a list of cities but from a list of military recruitment areas or the like (65). Comparing the information of Pliny and Strabo with that of Ptolemy, however, we can form a fairly clear picture of the urban network of the Rhineland in the late first century AD.

At this point in time, there were eight cities in the area, six of which formed part of a type D pattern: Avenches, Augst, Brumath, Trier, Cologne, Tongeren. This pattern was not significantly altered by the relocation of the capital of the Triboci from Brumath to Strasbourg, nor by the addition of two colonies at Xanten and Nijmegen on the northern edge of the area. Both were established under Trajan and had a fairly short life-span: Nijmegen was apparently abandoned in the third century and Xanten sometime during the fourth.

In terms of natural as well as urban geography, the Rhine valley between Speyer and Mainz forms an exception to the general rule. Here, the valley widens to form an expanse of arable land on the left bank, with two civitas-capitals, Worms and Speyer, only 34 kilometres apart. During the Roman occupation of the Agri Decumates, a third civitas-capital, Ladenburg, was established in the same district, but on the right bank. Further north, Wiesbaden was established at the confluence of the Rhine and Main, again on the right-hand bank side of the river. This group of cities formed a type C pattern in the second and third centuries. The abandonment of the Agri Decumates in the late third century changed the shape of the urban network, but not its type: Ladenburg and Wiesbaden disappeared from the city-lists, but Mainz rose in importance and was made a municipium under Diocletian.

Despite the turbulent history of the frontier zone, there are not many points of divergence between the first-century city-list and the Notitia Galliarum. Nijmegen and Xanten have come and gone; the Triboci have moved their capital to Strasbourg; the colony of Augst (Augusta Raurica) has been replaced by Basle, civitas Basiliensium. Finally, Mainz has been added to the list. It is interesting to note that the southernmost city, the Helvetian capital at Avenches, is still listed in the Notitia as civitas Helvetiorum though, according to Ammianus Marcellinus, it was ruined and half deserted by the middle of the fourth century (66).

6.5 Northern Gaul

For once, Pliny, Strabo, and Ptolemy are fairly unanimous when describing northern Gaul. Pliny does mention one tribe, the Atesui, which is not found in Strabo or Ptolemy. Ptolemy, on the other hand, lists the Arvii, who are unknown to the others - unless, of course, the Atesui and the Arvii are actually the same tribe (67). Neither has been satisfactorily located, nor has the Arvian capital of Vagoritum.

In the first century, northern Gaul was characterized by a fairly even urban density from Flanders to eastern Brittany. There was a slight decline in density as one moved westward, but viewed as a whole, northern Gaul clearly formed an urban pattern of type C, distinct from the type D pattern of western Brittany and the land south of the Loire.

When the city-list for the first century is laid alongside the Notitia Galliarum, we find that no less than five out of 26 cities have been struck off the list, while six have been added. In three cases, however, it is only a question of relocating the civitas-capital. Ptolemy gives Cassel as the capital of the Menapii (68); in the Notitia, it has been replaced by Tournai. Similarly, Bavai (69) has lost its status to Cambrai. Finally, Carentan, the original capital of the Venelli (70), has been replaced by Coutances (Constantia) on the other, western side of the Cotentin peninsula (71). Assuming that Coutances was promoted to the status of capital at the same time that its name was changed from Cosedia to Constantia, this relocation must in all likelihood be dated to the reign of Constantius Chlorus (293-306 AD).

Possibly, Vieux lost its independence at the same time. A separate civitas Viducassium is attested as late as 238 (72), but there is no trace of it in the Notitia, and it appears to have been absorbed into the territory of neighbouring Bayeux.

Lillebonne (Juliobona), too, has disappeared: its fate is obscure, but Rivet (1976) has, very convincingly, suggested that it lost its harbour due to a change in the course of the Seine. Another seaport, Boulogne, has risen from the ranks to become a civitas-capital, thanks no doubt to its location at the continental end of the shortest possible Channel crossing.

Newcomers, too, are the civitas Saiorum at Sées and the civitas Aureliani, Orléans. Although Cenabum on the Loire was an important market already in Caesar's time (73), it was apparently promoted to the status of civitas-capital only after the fall of the Gallic Empire - perhaps in connection with a general overhaul of the Imperial administration?

Despite the considerable number of changes in the status of individual settlements, the overall pattern of cities in northern Gaul remains essentially the same: the most important alterations are the 'filling out' of previously empty spaces surrounding Sées and Orléans. The average inter-center distance for the area is 57.7 kilometres in the fourth century against 57.2 in the first; this insignificant variation is mainly due to the relocation of civitas-capitals.

6.6 Central and Western Gaul

Central and western Gaul, comprising the Armorican peninsula (Brittany), the Loire estuary and the lands between the Loire and the Dordogne, includes an area of about the same extent as northern Gaul; but where northern Gaul had 26 cities in the first century AD, central and western Gaul has only nine. They form a typical type D pattern, characterized

by very high intercenter distances. In addition to these nine, Pliny lists a further two tribes, the Anagnutes and the Ambilatri (74) in his description of Aquitania. These tribes are not found in Strabo, nor in other sources.

The urban pattern appears to have been very stable: from the first to the fourth century, only one new city has made its appearance: Angoulême, civitas Ecolisnensium. Located close to the mid-point between the five civitas-capitals of Poitiers, Limoges, Périgueux, Saintes, and Bordeaux, Angoulême is a typical example of how a vacant space in the urban grid may be 'filled in' by a new city (compare the cases of Sées or Verdun). With the promotion of Angoulême to its new status, this corner of western France has changed to a type C pattern, though the average intercenter distance for the region as a whole remains high - 93.2 km. It is worth noting, incidentally, that although Angoulême enjoys a central location in geometrical terms, it does not form a node in the transport network joining the neighbouring cities. In antiquity, the Poitiers-Bordeaux highway went through Saintes, while the cross-country highway from Limoges to Saintes passed north of Angoulême (75).

6.7 South-western Gaul

The area stretching from the banks of the Dordogne and the foothills of the Massif Central in the north to the Pyrenees in the south formed the southernmost part of the Three Gauls. It comprised two distinct parts: Aquitania proper "between the Garonne and the Pyrenees" (76), dominated by Iberian tribes, while the Bordeaux region and the land north of the Garonne was peopled by Gauls. When the three provinces were established, the term Aquitania was extended to cover the whole of the western province. This province was later subdivided; the Iberian lands south of the Garonne eventually became known as Novempopulania ('The nine peoples') while the northern part retained the name of Aquitania.

The sources for the urban structure of southwestern Gaul, especially for Novempopulania, pose formidable problems of interpretation, which cannot all be dealt with here. Our main source, Pliny, enumerates no less than thirty tribes within Aquitania proper, i.e. Gascony and Béarn (77). According to his usual practice, this should correspond to as many cities, which would indicate an extremely dense urban pattern. Strabo, however, lists only three cities, while Ptolemy, a century later, has five (78).

Basically, this leaves us the choice of two hypotheses. The first is that Pliny gives us the list of cities (tribes) in extenso, while Strabo, in accordance with his stated editorial principles (see above, page 15) but at variance with the practice so far followed when dealing with the Three Gauls, has deleted all but the most famous cities from his list. If this hypothesis is correct, we should rely on the list of Pliny and leave Strabo aside.

The alternative hypothesis is that Pliny has not used official lists, but some other source, as the basis of his description. We know that he did so in other cases (Narbonese Gaul, the Rhineland). In that case, we should discard Pliny and rely on the list of Strabo.

There are two strong arguments against the existence of thirty civitates south of the Garonne in the first century. One is that Ptolemy, a century later, lists only five poleis: either we must presume a wholesale reduction in the number of cities at a time when the number was increasing in other areas of Gaul, or we must discard Ptolemy as well as Strabo (79). The other objection is that the sum total of civitates within the Three Gauls is too large. Strabo tells us that the names of sixty Gaulish civitates were inscribed on the altar of the Three Gauls in Lyon; Tacitus, that around AD 20 there were sixty-four civitates in the Three Gauls (80). We are not able to identify these sixty or sixty-four cities with certainty (81), but this is not a crucial problem: the point is that, if all Pliny's Aquitanian tribes are counted as civitates, there would be eighty or ninety civitates within the Three Gauls. The most likely explanation, then, is that the second hypothesis is correct and that most of Pliny's tribes did not enjoy the status of civitates. This may also apply to the otherwise unknown Anagnutes and Ambilatri (page 40).

North of the Garonne, Pliny and Strabo are in agreement, save for the civitas of the Vellavi with St.-Paulien near Le Puy for its capital. The Vellavi are not mentioned by Pliny, but appear in Strabo as well as Ptolemy (82) and should be counted among the civitates of the first century AD.

Relying on the information of Strabo, then, we have nine cities in southwestern Gaul in the first century. The eastern seven form a type C pattern stretching into Narbonese Gaul, with intercenter distances varying from 63 km (Auch) to 81 (St.-Bertrand-de-Comminges), the average being 71.7 km. The remaining two cities, Bordeaux and Dax, are found at the western extremity of the area, close to the Atlantic seaboard. Bordeaux clearly belongs to the type D pattern of western Gaul, which extends all the way down the coast from Brittany. At a first glance, too, Dax would seem to belong to this group; but the isolation of Dax is due more to special features of the physical geography. Its hinterland is bounded to the west by the sea, to the north by the sandy heaths of les Landes and to the south by the Pyrenees. In fact, its nearest neighbour is not a Gallic town at all, but Pamplona (Pompaelo) on the Spanish side of the Pyrenees.

From the first to the fourth century, few changes took place in the urban network north of the Garonne. The five cities Agen, Cahors, Rodez, Javols, and St.-Paulien still form a type C pattern, just as western Narbonese Gaul has retained its type C pattern. The average intercenter distance has been reduced from 71.6 km to 64.0 km, thanks to the promotion of Albi and Lectoure to the status of civitas-capitals.

South of the Garonne, the situation is altogether different, and the number of cities has been tripled. The sources unfortunately do not permit us to date every stage in this process. Bazas, which is mentioned by Ptolemy (83) and Lectoure appear to have been administrative centers by AD 100 (although in the case of Lectoure, its precise status as a civitas-capital is not documented until AD 241)(84). Ptolemy mentions another city, Tasta, which has not been located. Hirschfeld (1896) proposed that it might be identical with Eauze, the capital of the Elusates.

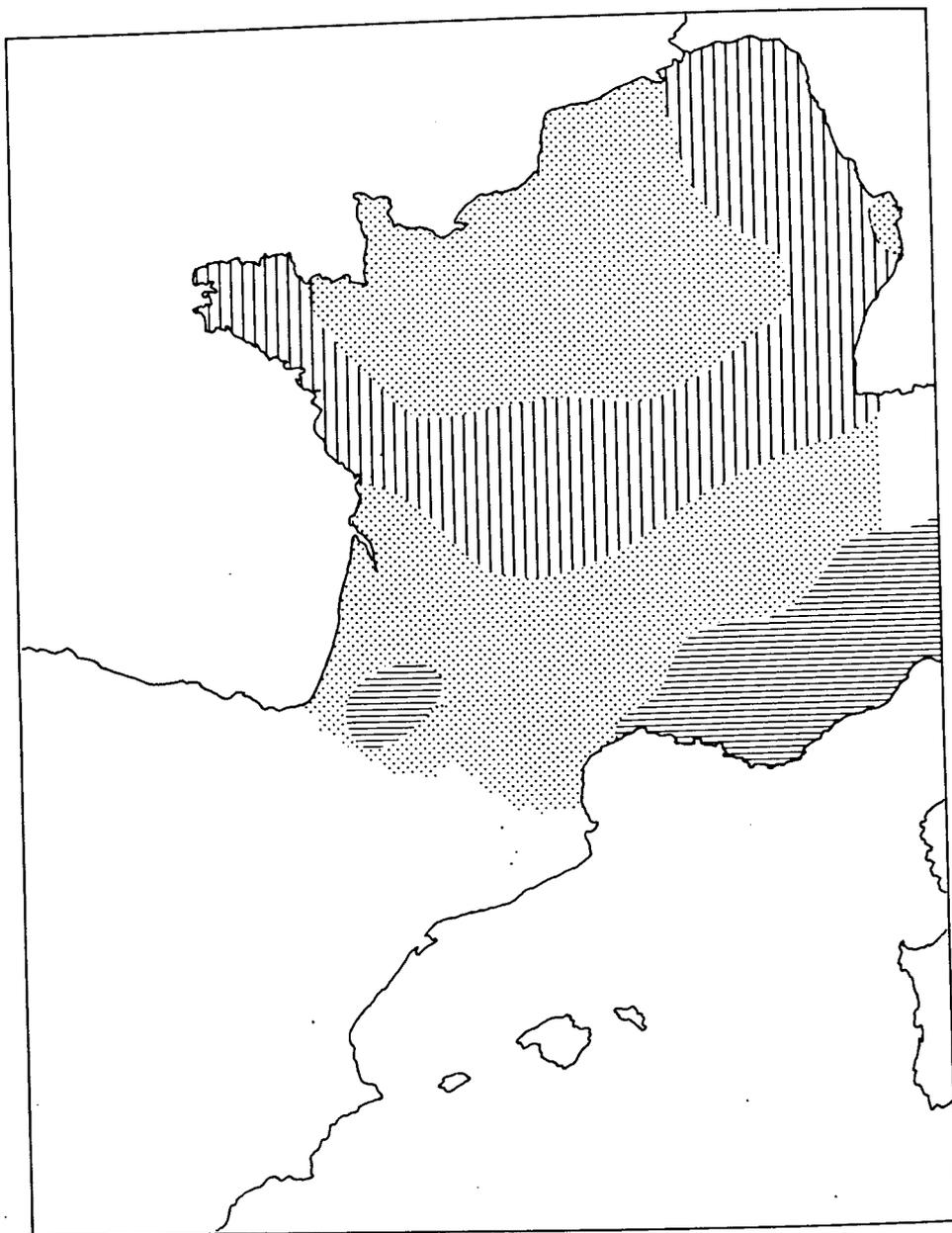


Figure 6.1: Urban patterns in Gaul, fourth century AD.
Compare with figure 5.2 (page 27).

At the beginning of the first century AD, there were no more than four cities south of the Garonne (Bordeaux, Dax, Auch, St.-Bertrand); at the beginning of the second century, there were probably six, perhaps seven. When the province of Novempopulania was established, there were ten (the novem populi and Bordeaux, which was assigned to the province of Aquitania) and by the time of the *Notitia Galliarum*, there were thirteen.

With the establishment of a civitas Vasatica at Bazas and, later, the civitas Boatium with its capital somewhere near Arcachon, Bordeaux was drawn into a denser urban pattern: here, as around Angoulême, a type D group developed into a type C group. Similarly, Dax acquired two new neighbours in Aire and Lescar (63 and 64 kilometres distant, respectively) and thus became a member - albeit a marginal one - of a type C group.

To the east of Dax, Strabo had known only two cities, which formed a type C group with Agen and Toulouse. Gradually, six more emerged: Lectoure, Eauze, Lescar, Aire, Oloron and Tarbes, which formed a group with intercenter distances from 31 km (Lectoure) to 44 km (Tarbes), far below the normal intercenter distances of the Three Gauls. There can be little doubt that, by the late fourth century, this part of Novempopulania had acquired a type B pattern.

Farthest to the south, we find the old city of St.-Bertrand and the new civitas Consorannum at St.-Lizier; after the demotion of Ruscino, St.-Lizier was the southernmost city of Gaul. These two towns do not seem to form part of the type B pattern of Novempopulania; they rather belong to the type C pattern stretching from Cahors, St.-Paulien and Lodève to Albi and Toulouse.

6.8 Summary

From the first to the fourth century AD, the number of civitates in Gaul was increased, producing a closer-meshed network of cities. The increase was far from evenly distributed, as will be seen from a comparison of fig. 5.2 with fig. 6.1.

In the first century AD, urban patterns of type D covered half the area of Gaul, while type C is dominant in the fourth century. Type B, which in the first century had been limited to the Rhône Valley and the coastal areas surrounding the Rhône estuary, has spread into other parts of southern Gaul: Novempopulania and the Maritime Alps. In the central Gaulish belt from Burgundy in the east to Poitou and Brittany in the west, there has been little change, and type D remains dominant.

The change from type D to type C has been more widespread in the south than in the north of Gaul: thus, the northern limit of type D has only shifted slightly southwards, while the southern limit has been pushed far northwards, and type D is no longer found south of the Dordogne.

CHANGES IN THE URBAN PATTERN:
CAUSES AND EFFECTS

Having investigated how the urban network of Gaul was changed from the first to the fourth century AD, it is time to ask why. All settlements investigated in the previous chapter are cities, enjoying a status which has been granted - and can be taken away - by the central organs of power within the Roman state. But why does the state grant this status, and why does it deprive a city of its status? Does the political system operate autonomously and without interference: in other words, can the decision-makers in Rome or in the provincial capitals choose any alternative at will? Or do changes in the spatial structure of power spring from the need to adapt political structures to meet changing requirements imposed by changes in the economic structure?

Certainly, one can point to cases where changes in the political structure, i.e. in the status of communities, clearly reflect the inner logic of the political system itself rather than its adaptation to changing conditions in the world outside. An obvious example is the subdivision of Gaul into more and more provinces. With a term borrowed from the study of late Imperial Chinese administration, we can describe these subdivisions as attempts at narrowing the "span of control", that is, to reduce the number of subordinate administrative units (cities) in relation to the number of superior administrative units (provinces)(85). Evidence from China suggests that a narrow span of control is usually motivated by military considerations, e.g. the need for close surveillance of a border area, while a wider span of control is suitable if the aims of the administration are primarily of a fiscal character (86). The transition from a broad span of control under the early Empire (20 to 30 cities per province) to a narrow span of control in the fourth century (2 to 13 cities per province) should, judging from the Chinese analogy, reflect the growing concern of the administration with security and defense. This is consistent with what we know of the changing situation in the Empire generally and with the fact that, in the fourth century AD, we find very narrow spans of control in the border provinces, which are exposed to the full impact of the Völkerwanderung: Germania Prima has four cities, Germania Secunda only two.

The theory that the number of administrative units is increased in order to improve Imperial surveillance and control cannot, however, be transferred from the provincial to the regional level. One could easily hypothesize that Imperial administrators saw advantages to be gained by 'homogenizing' the urban pattern: splitting large civitates into smaller units and amalgamating the smallest civitates to form larger units. It is less easy to see why they should wish to increase the total number of civitates, especially as this would entail a widening of the span of control at the provincial level - just the opposite of what appears to have been the administrative policy of the later Empire. Of course, the proliferation of units (cities) at the regional level could be viewed as

a parallel to the proliferation of units at the provincial level, but this explanation is too simplistic - in fact, it is no explanation at all, except in terms of Parkinson's Law. One could argue that the purpose of establishing new cities was to reduce the physical area of each unit, just as the physical area of the provinces was reduced. However, apart from ignoring fundamental differences between the aims and needs of provincial and regional administration, this fails to explain why the largest civitates - in central Gaul - are left intact, while the smaller civitates of southern Gaul are broken up.

Again, if the relocation of civitas-boundaries and the subdivision of civitates was exclusively a matter of administrative policy, we should expect several civitates within a province to be reorganized at the same time. Obviously, a piecemeal reorganization would mean more work, repeated revisions of the census, etc. However, in the few instances where we can date changes in the list of cities, these changes appear to have taken place in a piecemeal fashion. For example, the increase of the number of cities in Novempopulania from three to thirteen at first sight resembles a case of sweeping administrative reform, yet we know that it took place in stages and over several centuries (see page 43, above). In other parts of Gaul, it is equally difficult to find evidence for the wholesale reorganization of civitates: at best, it seems probable that where several new civitates were hived off from a common parent territory (e.g. Genève and Grenoble), this took place simultaneously.

Changing the status of a settlement, then, though it takes place through administrative action, will usually not be based on an autonomous decision within the administrative sphere; rather, it is the response of the administrators to changes within the economic sphere - as part of the continuing endeavour to maintain congruence between political centers and economic nodes.

This congruence can be maintained in two ways. One can employ an active policy, shaping the economic structure to fit the political structure; or one may fall back on a passive policy, adapting the political structure to changes which have already taken place within the economic structure.

In more recent periods, restrictions on markets and fairs have been instruments of an active policy in this field. Trade outside officially designated market towns might be restricted or even prohibited, while market rights were granted only to settlements which were subject to some form of state or royal control - that is, chartered towns.

Roman law, too, allowed the state a degree of control over marketing patterns. The right to hold periodic markets, nundinae ("ninth-day markets") was a privilege granted by the Senate or by the Emperor (87) and could be revoked.

While Roman market legislation resembles many Medieval market laws (not surprisingly, since Roman law will often have served as a model), Roman and Medieval market legislation have less in common than would appear at first sight. The market laws of the Medieval and early modern period functioned within a different ideological setting and presupposed

a different view of the relation between town and country from that prevalent in the ancient world (see page 2, above). Furthermore, they served as instruments of economic policy: market laws were intended to protect the traders and artisans of the cities from competition and to maintain the division of labour between town and country. By contrast, Roman market laws do not appear to have great economic significance. Their main importance is found on the political or symbolic level: the granting of market rights serves to underline the authority of the grantor. This is how they are seen by Suetonius, who records the application of the emperor Claudius to the Senate for the right to hold a market on his estate as an example of that emperor's respect for senatorial authority (88).

Ramsay MacMullen has suggested (89) that market rights also formed instruments of an active economic policy, regulating the holding of markets within a region. There is little certain evidence for this; but then, there is very little evidence for the character and development of the nundinae system in general. There is a reference to nundinae in the letters of Pliny, who relates how the city of Vicenza filed a complaint with the Senate against the application of a local landowner for the right to hold markets on his estate (90). There is no doubt that, in this case, the motives of the Vicentines were of an entirely economic character, but does this prove that, in the eyes of contemporaries, the system was meant to serve economic interests? In his letters, Pliny shows little interest in the economic aspects of the case; he does not even inform us of its outcome, but it does not appear that the Senate upheld the objection of the Vicentines (91).

If the rules limiting the holding of nundinae had a practical significance, this is more likely to have been a question of restricting the formation of new economic nodes in particular areas, and of levying a tax on market participants. Both points are brought forward by Brent D. Shaw (1981) in a detailed analysis of north African nundinae. Shaw further suggests a link between the restrictions on nundinae and Imperial paranoia: the fear, expressed by Trajan in a letter to Pliny (92), that any kind of corporation or association may be exploited for politically subversive purposes. We should not, however, over-emphasize this last aspect. The fact that market rights, even in the provinces, are granted directly by the Emperor, need not indicate that markets were considered potentially dangerous. (If so, why grant market rights at all?). It may just as well have been a case of enhancing their symbolic value as a privilege which only the supreme authority at Rome, not the provincial governor, can bestow. In a similar manner, within the city of Rome itself, the right to a domestic water supply was a privilege granted directly by the Emperor (93).

Finally, one notes that, unlike the more restrictive legislation of later periods, the rules governing nundinae apparently only concerned actual markets: there is no evidence for a general ban on trade and industry in the countryside. As an instrument of an active economic policy aimed at securing congruence between economic and political centers, the nundinae legislation would have been largely ineffective. This leaves passive adaptation of the political structure as the only way to achieve and maintain congruence.

In the early first century AD, economic nodes and political centers overlapped in most of Gaul. In the Rhône valley and central Narbonensis, the establishment of Roman colonies close to existing Greek or Gallic centers ensured congruence, and the "filling in" of the older pattern with new colonies and civitates to form a type B pattern produced a close-meshed urban network with few opportunities for new economic centers. As one would expect, the urban pattern of this area was almost unchanged through the following three centuries (page 35).

In the Three Gauls, most cities were civitas-capitals, often successors of pre-Roman tribal centers. A number of minor settlements gradually developed, crystallizing around fairs, market sites, sanctuaries, forts, river crossings, road junctions. These local centers were subordinate to the regional centers, on which they were politically dependent as part of the civitas-territory. In regard to size, rate of growth and degree of monumentalization, too, the civitas-capitals remained far ahead of the minor settlements during the first and early second century AD.

The economic superiority of the civitas-capitals is based on a complex of factors, among which their "head start" as the first urban centers in a largely non-urbanized economic landscape is only one. Most of these factors represent spin-offs from the political status of the town and its administrative functions. The civitas-based system of regional administration concentrated the residences - or, at least, secondary residences - of the rural élite in the civitas-capital: this meant a concentration of consumption in the capital. Public building activity, financed from the fortunes of the élite and at this stage largely confined to the civitas-capitals, also stimulated urban consumption. And consumption was one of the major stimuli to urban growth in the first century AD, a fact attested by the numerous minor settlements growing up adjacent to military establishments.

With its greater volume of consumption, the civitas-capital could offer a greater variety of goods and services than the local centers: it had a higher degree of centrality. At the same time, the political status of a town in itself no doubt enhanced its position in the eyes of the rural population: its subjective centrality was higher. Finally, the Roman highway system reinforced the trends indicated above: many roads terminate or intersect at civitas-capitals, and in relation to the primary road network of Gaul, civitas-capitals generally enjoy better locations than minor settlements.

These advantages of the civitas-capitals over their lesser neighbours were most marked during the early phase of urbanization, when development was forced ahead in the civitas-capitals, while the growth of minor settlements proceeded at a slower pace. When the basic pattern of civitas-capitals had been established, a period of stability followed. Small towns might rise in economic importance, size, or monumentalization, to rival the civitas-capitals, but the need for changes in the political structure was not felt in more than a few cases. The number of towns promoted from a subordinate position as minor settlements (vici) within a civitas to the status of independent civitates during the first and second century was limited: the majority of promotions take place at a later date, and predominantly during the third century AD.

By this time, the economic structure of the Three Gauls was no longer dominated exclusively by the *civitas*-capitals. Some of the capitals themselves were in economic decline. New centers of production had been established (e.g. the pottery industry of southern Gaul); new crops had been introduced (e.g. vines in Burgundy and along the Moselle); new trade routes (e.g. to Britain) had been opened. Among the élite, the focus of economic attention was shifting from the cities to the villas of the countryside. An adaptation of the politico-administrative structure was called for, if congruence with the economic structure was to be maintained.

We do not know how clearly decision-makers at the provincial level perceived the need for change. It is likely that they did not perceive it at all, but merely responded to wishes voiced by the local élites. If these wishes seemed consistent with the interests of the Imperial administration, they might be granted; otherwise not.

Among decision-makers and within élites, there will have been conservative groups striving to maintain the status quo as far as possible. In large organizations, middle-level administrators may be reluctant to change established arrangements and routines; and in local élites, there will be groups whose economic, social, or political standing would suffer if existing patterns were disrupted. Furthermore, the title of *civitas* no doubt remained an attractive mark of collective status, even at a time when local magistracies were no longer coveted by the élite.

We must not conclude, however, that vested interests always formed obstacles to changes in the *civitas*-structure. Many unknown factors will have played their part: the geographical composition of the élite, intra-regional conflicts, etc. In addition, though all forms of adaptation meant change, all forms of change were not equally controversial. Changes in the *civitas*-structure could take place in three different ways:

1. An independent *civitas* is dissolved and its territory assigned to a neighbouring *civitas*.
2. The *civitas*-capital is shifted to another town within the *civitas*.
3. A *civitas* is split up into several *civitates*, one of which retains the old *civitas*-capital as its center.

Dissolution of an existing *civitas* is clearly the most controversial process, since it entails a loss of status not only for the city, but for the individual decurions (*civitas* councillors). Such dissolutions are fairly rare in Gaul. In two cases it seems to be directly connected with the loss of economic importance: Lillebonne (*Juliobona*) lost its *civitas*-rank, presumably due to the loss of its harbour, and *Maritima* probably suffered a similar fate. Carpentras and *Ruscino* may have been devastated during the civil wars of the third century or punished by the victors. The colonies on the lower Rhine, Xanten and Nijmegen, may have been destroyed or simply abandoned. The two remaining cases, Feurs and Vieux, would appear to have fallen victims to the territorial expansion of neighbouring *civitates*.

The removal of the seat of the *civitas* council to another town would entail a collective loss of status for the settlement concerned, but no individual loss of status for the decurions. In a Gallo-Roman context, where decurions were mainly drawn from the rural landowners, their status was not tied to a specific town, and relocation of the *civitas*-council may often have taken place at the instigation of the *civitas* council rather than against its wishes. Examples of relocations are: Augst to Basle, Carentan to Coutances, Brumath to Strasbourg, Aime (*Axima*) to Moutiêrs, Bavai to Cambrai, Cassel to Tournai.

Subdivision of a *civitas* into several units, too, could take place without a direct loss of status for the decurions. For the *ordo decurionum* as a whole, loss of territory may have meant a loss of prestige; yet, within the *ordo*, there will have been residents of outlying districts looking forward to independence and the advantages it would bring. Furthermore, with the gradual erosion of local autonomy and the increased burden of responsibilities, e.g. for the taxes levied within the *civitas*, a reduction of territory may sometimes have been welcomed.

In any case, a precondition for the establishment - by relocation or subdivision of *civitates* - of a new *civitas*-capital is that a new economic center of some importance has arisen. Therefore, we must now take a closer look at the economic background to the changing pattern of *civitates*.

If a new regional center is to develop, the first condition is a hinterland of sufficient size and economic potential, since the hinterland will set the upper limit to the growth of the center - and only by virtue of reciprocal economic relations with the hinterland can the settlement rise to the level of a regional economic center. A single, specialized activity, no matter how profitable, will not produce a regional center. Settlements with extensive industrial activity such as Rheinzabern or Lézoux (pottery) or Argenton-sur-Creuse (ironworking) were never promoted to *civitas*-capitals, nor were any of the British mining towns.

Whether a given area will support a new regional economic center is determined by several limiting factors: the level of economic development, the population density and the extent of the area. This last factor may be defined by natural boundaries (forests, estuaries, coastlines) or by the location of other centers. To a certain extent, one factor may compensate for another: e.g., high population density will compensate for the limited extent of a given hinterland. Obviously, geographical extent will not always compensate for other factors, since the maximum effective extent of the hinterland is in any case determined by the range of the center - in this case, half a day's travel.

This is clearly seen in western Gaul, where large expanses of territory, though far from other cities, fail to produce new regional centers. Apparently, western Gaul was too thinly populated - perhaps also insufficiently developed economically - to support new regional centers. Local centers and periodic markets presumably sufficed to cover the inhabitants' need for such goods and services as they could not produce themselves.

On the whole, conditions were more favourable in northern Gaul; here, the population was sufficiently dense to support a denser urban pattern - type C - than in the west, and the denser urban pattern also indicates a higher level of economic development and a more advanced division of labour between town and country. In this area, quite a few new economic centers appear, and many of them reach the status of *civitas-capitals* (94). They are often placed at key nodes in the transport network - e.g. Orléans - or midway between existing cities - e.g. Sées. Normally, they are located at a respectful distance, 50 km or more, from older *civitas-capitals*.

In southern Gaul, especially in Novempopulania and the Maritime Alps, the new centers are closer to the existing ones. To explain this, Rivet (95) has drawn attention to the physical geography of the region: many small valleys isolated from each other. There is, indeed, little doubt that mountain ridges and similar features often mark natural borders of urban hinterlands, fragmenting an area into a larger number of hinterlands than would be the case on an isotropic plain of the same extent. Even so, relief will not serve as a general explanation of the denser urban patterns found in southern Gaul.

That mountain areas elsewhere in Gaul, e.g. the Massif Central or the Vosges, have not produced similar patterns but, on the contrary, very sparse urbanization, is no crucial objection to Rivet's thesis. More serious is the observation that the dense urban pattern of Novempopulania is not limited to the mountain areas: it spreads out into the foothills and plains as far as the banks of the Garonne. Indeed, the lowlands of Novempopulania (apart from the heaths and moors of the Landes) have a higher urban density than the Pyrenean foothills.

Climatic similarities between the Alps and the Pyrenees might be invoked: both areas may have been especially suited for the intensive cultivation of cash crops such as grapes or olives. This factor should not be underestimated but can hardly be the sole explanation behind the variation in urban density.

Perhaps there is no sole explanation. Perhaps the type B patterns of the two areas are due to different causes. Viewing the Maritime Alps by themselves, it does not seem very surprising that an area bounded by a type B group of cities to the east (in Cisalpine Gaul) and another type B group to the west (in Narbonese Gaul) should itself, too, have a type B pattern. Considering that the Maritime Alps form a transit area between Cisalpine and Transalpine Gaul, having close commercial contacts on both sides, it would be more surprising if its urban pattern deviated markedly from those of its neighbours.

This leaves the problem of Novempopulania. Both Caesar (96) and Strabo (97) emphasize the differences between the Aquitanians proper and their neighbours, the Gauls; and both indicate the Garonne as the northern limit of Aquitanian territory. Strabo additionally informs us that the Aquitanians were unlike the Gauls in language and physical appearance and that, in these respects, they resembled their southern neighbours, the Iberians. It is likely that in their social structure, too, the Aquita-

nians were closer to the Iberians, and Pliny's extensive list of Aquitanian tribes mentioned previously (page 40) indicates that one of the distinctions between Gauls and Aquitanians may have concerned the size of the basic political unit: apparently, the population of Aquitania proper was split up into much smaller "tribes" than the population north of the Garonne. In this respect, too, they resembled the Iberians: south of the Pyrenees, so Pliny informs us, the population was likewise divided into a large number of "peoples" or "tribes" (98).

Such a sociological distinction between Aquitanians (and Iberians) on the one side, Gauls on the other, is not mentioned by any ancient author. This does not indicate that the distinction did not exist, only that Romans paid no attention to it - as subsequent developments in Aquitania confirm. Just as Aquitanians and Gauls were lumped together in a single province, the same type of territorial division - a *civitas* pattern of type C and D - was applied both north and south of the Garonne.

To the north, as we have seen, this *civitas* structure remained exceedingly stable, no doubt because it corresponded to pre-Roman tribal divisions. To the south, the amalgamation of many small tribes into a few large *civitates* failed to produce a stable structure. On the contrary, the result will have been an inferior degree of subjective centrality for the *civitas*-capital and strong centrifugal tendencies within the *civitas-élite*, reducing the hegemony of the capital in favour of traditional tribal centers - which would, eventually, develop into regional centers in their own right, producing the close-meshed urban network of the fourth century AD.

Finally, we come to the urban network of central Narbonensis. Here, we found a type B urban pattern by the early first century AD, spreading out from the lower Rhône valley into the coastal area on either side of the estuary. The density of the urban pattern never increased beyond this point; on the contrary, two cities were struck off the list. With nearly all of the fertile lowland situated within half a day's travel of existing cities, even the densely populated and economically developed Rhône valley would not support new regional economic centers. The level of urban saturation had been reached.

This would indicate that the type B pattern provides optimum conditions for the division of labour between town and country. If so, then type A should not be viewed as a further stage of development beyond type B, but rather as a historically earlier stage of development where other factors than purely economic ones were decisive for urban location and development. (Indeed, the cities belonging to type A groups are, on the whole, much older than those belonging to type B groups). In other words, left to itself over a long period of time, it is more likely that a type A pattern would evolve into a type B pattern than vice versa.

URBAN PATTERNS AND ECONOMIC DEVELOPMENT

In the preceding chapter, we discussed the effect of economic factors on the urban structure. In this chapter, we shall deal with the converse effects of the urban structure on economic development.

The term "economic development" has, in contemporary usage, become closely linked to the division of the world into "developed" and "underdeveloped" (or, to use the current euphemism, "developing") countries. To a large extent, this division is a by-product of European expansion and imperialism during recent centuries. This would seem to justify using the same concepts to describe the situation produced by Imperial Roman expansion, e.g. in Gaul. Actually, the application of these concepts to the Roman situation is fraught with problems.

For one thing, ancient and modern imperialism neither employed the same means nor pursued the same ends. For another, modern development research is of a prescriptive rather than a descriptive character: understandably, it does not seek to reconstruct the history of past problems but to find solutions to the problems facing developing countries here and now. A third problem is that in day-to-day usage, "developed" is often no more than a synonym for "industrialized": a concept which is devoid of any meaning in an ancient context. The attempt of Albert Deman (99) to apply modern criteria of "development" to Roman Gaul and Africa clearly demonstrates the dangers of a too simplistic transfer of concepts and methods from the modern to the ancient world.

Instead, one may leave aside the concept of economic development and focus on economic growth - as Hopkins (1978) has done. This, however, raises problems of another kind. It has been argued that what we term "economic growth" is a qualitatively different historical process from that observed in pre-industrial societies (100). Even accepting the relevance of economic growth as a parameter, its application demands more data than the scanty Roman evidence will normally provide. Hopkins manages, by drawing on material from all over the Mediterranean, to establish an empirical base for his rather cautious conclusions; these he supports by arguing from the related concepts of economic development and social division of labour (101).

With the social division of labour, indeed, we are much closer to a general criterion of economic development. Since the days of Smith, Marx, and Durkheim, the increasing social division of labour has been recognized as a characteristic tendency in the evolution of human society. In an industrialized society, the prime benefit of the increased division of labour is increased productivity. In pre-industrial societies such as Roman Gaul, the prime effect may have been to increase the volume of production at a given level of productivity.

In pre-Roman Gaul, rural agricultural production will have been maintained at a substantially lower level than objectively possible: there will have been unexploited reserves of labour as well as of arable land or forest which could be easily cleared. Of the amount actually produced, some will have been consumed on the spot, while another - considerable - part was taken by the tribal élite in the form of taxes, tribute, etc.

The incorporation of Gaul into the Roman Empire and the Roman economy led rural producers to increase their volume of production. They may have done so in order to obtain cash and to purchase some of the non-agricultural products offered in the cities; or, in most cases, they may have been forced to do so in order to meet the demands of the Roman state for taxes and levies in kind. For those who worked the land as unfree clients or slaves (102), the effect was the same: only, in this case, the landowner bore the demands of the tax-collector and passed them down to his dependents. Although the demilitarization of Gaulish society will have reduced élite spending on arms and horses, this will have been more than outweighed by the increased demands on the élite for taxes and for public building projects.

In such a situation, the increased social division of labour between town and country, between the professional army and the demilitarized aristocracy, between the vine-growers of southern Gaul and the grain-growers of the north, will lead to a greater total production (manifest in the fact that the rural producers support a larger number of non-producers than before), not necessarily through greater productivity, but rather by employing more man-hours on the available land or by clearing new land for the plough. This increase in production - in Marxian terms, an increase in the absolute surplus-value produced - must have been the most important factor in the economic development of Roman Gaul. However, there is good archaeological and literary evidence for the introduction of new tools and the spread of new crops, notably wine. For one hectare of land, wine will yield a greater revenue than most other crops, but since man does not live for very long by wine alone, wine-growing on a larger scale requires a market where surplus production can be traded for other products.

The development of towns and the social division of labour are closely interrelated. In human history, the formation of towns takes place only when the division of labour has reached a certain level. With its supplies of demonstration goods, its functions as a focus of trade and exchange, and the transfer of surplus-value from the countryside for consumption in the town, the existence of a town stimulates the further division of labour.

These observations have naturally led to the view that the quantitative growth of towns is a symptom of economic growth and development in the society that surrounds them, a thesis which until recently found support in the fact that the rate of urbanization (i.e. of urban residents to the total population) was highest in the industrialized countries, lower in "developed" agrarian economies (e.g. Argentina), and lowest in "primitive" colonial or post-colonial African societies. Similarly, the world's largest cities were found in the industrialized nations of Europe and

North America. That some urban areas - in Europe, normally the capitals - grew at a disproportionate rate in relation to the other cities, was explained by the 'Law of the Primate City', formulated by Mark Jefferson (1939). According to Jefferson, one center, the 'primate city', will tend to dominate both culturally and economically within a nation. As this phenomenon was first observed in industrialized ('developed') countries, it was interpreted by Jefferson as a sign of national economic health and of an integrated economy.

The realities of the post-war world have given rise to serious doubts concerning the correlation between urbanization, growth of 'primate cities' and economic health. The rate of urbanization is rising sharply in many 'developing' countries despite low economic growth rates, and the spreading urban areas of Bombay or Mexico City are hardly symptoms of economic vitality. On the contrary, French geographers have coined the quasi-medical term "macrocéphalie" to describe this phenomenon (103).

In today's world, the seemingly paradoxical combination of overurbanization and underdevelopment is partly accounted for by the high rate of population growth in recent decades - a phenomenon without parallel in antiquity. However, demography does not explain everything: for instance, why the rural population surplus drains into the largest cities instead of the country towns. Another cause is the absence of a network of small and medium-sized towns to act as growth centers in the rural economy; and the general absence of links, cultural as well as economic, between the few large cities and the multitude of villages. To describe this situation, E.A.J. Johnson (1970) uses the phrase 'polarized urbanization', which he interprets as a sign of 'economic dualism' (104). In Johnson's view, many developing countries have not one, but two economies: one comprising cities and towns with their adjacent areas, the other comprising the rural periphery which has almost no contact with the economy of the cities. Under these circumstances, the growth of large cities reflects neither economic growth, social division of labour, or national integration, but the inability of the agrarian sector to sustain a growing population and the absence of a mutually advantageous rural-urban division of labour.

Which are the factors that tend to 'polarize' urban growth, i.e. foster the spread of large cities at the expense of smaller and medium-sized centers? Johnson names two important ones: the tendency of political centers to dominate in the economic sphere as well (due, among several things, to the concentration of élite consumption in the large cities), and the distortion of spatial patterns wrought by 'linear' forms of transport such as railways, highways and rivers (105).

Another researcher, Carol A. Smith, has studied the same problem from an anthropological point of view (in contrast to Johnson's 'prescriptive' economic approach) and with greater emphasis on élite control over trade and marketing patterns as a factor promoting the development of 'dual economies' and 'hypercéphalie' (106). Smith proposes a typology of trading patterns and relates this to the patterns established by colonialism and neo-colonialism in many countries. To facilitate the movement of a few, specialized primary products from the inland production areas to the ports, trade and transport networks were laid out without regard

to the wider economic or social structures of the areas involved (107). This led to a segregation, rather than an integration, of the national or regional economy, which was 'dualized' into two sectors: one structured according to European needs and centered on the largest cities, the other a predominantly rural, 'traditional' sector.

In a contribution to the volume Roman and Native in the Low Countries (B.A.R., 1983), Jan Slofstra attempts to define the level of social integration in north-east Gaul. The concept of 'integration' as used by Slofstra is not easily correlated with the economic concepts of Johnson: it would be too simple to equate 'lack of integration' with 'economic dualism'. But the basic theme of both authors is essentially the same: the relation between the central and urban sector on the one hand, the peripheral and rural sector on the other. Another difference is that whereas Johnson's approach emphasizes geography - in other words, the 'horizontal' relations within the social pyramid (page 1, above) - Slofstra's is primarily sociological, preoccupied with 'vertical' relationships. Still, the questions studied and the lines of argument reveal many similarities and points of contact, e.g. in Slofstra's description of the peripheral north Gaulish economy by means of a generalized descriptive model of 'peasant societies':

The economy of peasant societies is primarily a subsistence economy, which produces on a small scale. The family is its basic unit of production, and its economy is mainly directed at satisfying primary needs, rather than at sale of produce on the market. The agrarian technology may be called traditional.

Peasant societies are part of complex societies on a state level. But they are only integrated in the state system to a limited degree, and they have only limited access to the centralized system of decision-making and the market economy. Their channels of communication with the complex parts of society are faulty (...)

The preceding point makes it clear that the peasant economy is not completely a subsistence economy, but is also directed at the production of a certain surplus, of which the greater part is skimmed off in the form of taxes or rents. A small part of this surplus may find its way to the market. In other words, peasants do participate in price-making markets (...). But we must remember that the peasant economy, however incorporated into a wider economic system, is only partly and not primarily market-oriented. It is therefore only very partially a monetary economy. (108)

This model would seem to describe the situation in Slofstra's area, north-east Gaul, very well; the conditions described, however, may also be found in many contemporary 'developing' countries. Of course, the similarity is not fortuitous. For his model, Slofstra draws not only on recent studies of the Roman economy (notably those of the Finley school) but on modern development research - including the work of Carol A. Smith.

In the 'peasant society' of northern Gaul, Slofstra finds a counterpart to Smith's 'dendritic' market type (109); a type usually found at the periphery of modern economic systems - in other words, like northern Gaul in Roman times, at the periphery of a more developed economic system. However, it is dangerous to overemphasize the parallel between 'peasant societies' and 'dendritic' market structures. As Smith herself makes clear (110), the 'dendritic' type is only one among several patterns of exchange found in sub-integrated economies, and it is open to doubt whether the 'dendritic' model is the one that best describes the situation in northern Gaul.

Quoting Smith, Slofstra stresses how the dendritic pattern 'is efficient for channelling the upward flow of raw materials from the agrarian region and the downward flow of goods from the major urban center'(111). From the original context, however, it is clear that Carol A. Smith is thinking of the trade structures imposed by colonialism in comparatively recent centuries (112). The classical 'dendritic' pattern was evolved to facilitate European exploitation of overseas colonies; it is dangerous to assume that it will apply equally to the Roman Empire, which had different economic goals and a different transport structure. Land routes, not the sea, held the Roman Empire together (113).

These points, important as they are, do not disprove the general validity of Slofstra's model. However, they are of decisive importance for the verification of the model in a Roman context. Since 'peasant society' is only a description of a hypothetical state of affairs, it does not in itself tell us anything at all about Roman Gaul. It must be accepted or rejected on the basis of a comparison between the conditions presupposed or predicted by the model and those actually prevailing in what we consider to be historical reality, however imperfect our knowledge. In northern Gaul, the literary sources are scanty, and we must rely in the main on archaeological evidence (114). However, we need to link the information provided by archaeological research with the information predicted by the model - and this is not always easy. Between observed reality and the model, a third component is necessary to complete the analytical framework.

Slofstra, no doubt correctly, points to spatial analysis as the method most likely to provide the missing link. Integrating geographical theory and the anthropological approach will, he hopes, be 'the finishing touch which makes the latter operational' (115). A major obstacle to such an integration, however, is the a priori assumption that the economic and social structures described by the 'peasant society' model will be reflected in only one type of market pattern, the 'dendritic' market of Carol A. Smith. This despite the fact that other patterns are known to have co-existed with the economic and social conditions described - and despite the absence of one major precondition for the formation of dendritic market patterns, namely a system of colonialist exploitation.

In short, the question 'which spatial pattern reflects insufficient integration' (or 'economic dualism') is incorrect. Firstly, because it ignores the basic premise that sub-integration (economic dualism) is found in combination with several spatial patterns. Secondly, because it implies that the spatial pattern follows from the social and economic structure - which

will often, but not always, be the case. It may not have been the case in Roman Gaul, where major features of the economic landscape - cities and highways - were shaped according to the requirements of Roman administration, not the needs of traditional Gaulish society.

It would be more correct to pose the question as follows: 'Within which spatial pattern(s) is sub-integration (or economic dualism) possible or probable' or, even simpler, 'which spatial patterns tend to inhibit integration and promote economic dualism'?

One key concept in this connection is access. If two economic systems are to be coordinated, not to say integrated, their agents must be in contact. Deprived of access to each other, interaction between the agents is ruled out.

Lack of access may be due to physical barriers. The rural-urban division of labour is interrupted when a town is besieged; or if someone locks the city gate and loses the key. Distance may replace physical barriers, as in late eighteenth-century England, where it was considered safer to deport convicts to Australia than to keep them behind bars at home. In this case, of course, not everyone was cut off from access: the guards and governors of the penal colonies could return to England, even if the convicts could not.

In peacetime, there were no physical and very few legal barriers to economic interaction between town and country in Roman Gaul. If any factor limited access, this factor must have been distance.

For any town-dweller, the agrarian economy outside was within easy reach: on market-days, it was accessible within the town itself. Not every peasant had the urban economy within reach, i.e. within half a day's journey or less. The urban center was not inaccessible. By devoting several days to the purpose, any peasant could visit the center - but the economic benefit might be insignificant, perhaps even negative, if the cost and bother of the trip were not balanced by the revenue gained. But even this would not preclude a journey: the peasant may have been forced to go to market in order to obtain coins for the tax-collector, or he may have had urgent non-economic motives for his journey. Possibly, he could combine all his errands into one annual visit to the center of his civitas.

Whatever the case, day-to-day or week-to-week interaction with the economy of the city becomes impossible at such a distance, and peasants residing far from the city have little chance of exploiting the demand of the urban market in the same manner as those living within three to four hours' journey time of the city. De facto inaccessibility due to distance will have been an important factor affecting the formation of the agrarian economy in Roman Gaul.

Can accessibility be measured in quantitative terms? Certainly. The most precise method would be to measure the distance from every known villa or farm to the nearest city. Such a survey lies outside the scope of this study, and it would be fraught with methodological problems due

to the lack of up-to-date archaeological surveys for much of France. Another approach is to study the relationship between cities and smaller communities (towns, villages). This is the method used by Johnson (1970) to demonstrate the correlation between economic development and well-integrated urban networks. Johnson calculates the rate of towns (defined as settlements with more than 2500 inhabitants) to villages in some European and Middle Eastern states. In the highly integrated economies of western Europe, the ratio of villages to towns is low (Switzerland: 5, Denmark: 9, Netherlands: 16), while it is high in some middle eastern areas of low economic integration (Saudi Arabia: 157, Turkey: 201, Yemen: 635)(116).

Even in a modern context, this method may be criticized on several points. In Roman Gaul, it is clearly not directly applicable, since we do not have sufficient information about the number and location of villages. While cities are mentioned in our literary sources, villages are mostly not, and many no doubt remain undiscovered by archaeologists. If we calculate the village/city rate at a given figure now, it will have increased in twenty years' time, simply due to the discovery of new Gallo-Roman villages.

This does not completely preclude a comparison of Johnson's results with conditions in Gaul. Assuming that farms, villas and villages are evenly distributed, the ratio of villages to cities will be proportional to the number of square kilometres per city. Based on the theoretical radius of the urban hinterland (table 5.7, above), we can obtain a - highly hypothetical - figure for the number of square kilometers per city within each of our four types of urban pattern (117). Taking type A as our baseline and assuming that type A corresponds to a well-integrated rural landscape like that of present-day Denmark (11 villages per town), then type B would correspond to a rate of 44, comparable to Portugal (37) or Norway (58); type C would correspond to 240 - comparable to Turkey (201); and type D, with a rate of 680, would exceed Yemen's 635.

A third approach to the question of access is to plot the cities of a given area on a map, then draw circles to indicate the areas within half a day's travel of a city. Even a brief visual comparison of the maps, figure 8.1 to 8.4, shows that in central Italy (type A pattern), practically all cultivable land is within half a day's travel of a city; in districts with a type B pattern, a large part of the area is within reach of a city. In districts with type C patterns, on the other hand, the larger part of the cultivable area lies beyond half a day's travel of a city, and in type D patterns, a mere fraction of the total area is within half a day's travel of the city.

From these observations, it becomes clear that the large, monumentalized cities of Roman Gaul may well have co-existed with unintegrated, peripheral rural areas of the 'peasant society' type described by Slobin; and that at least one of the preconditions for economic dualism - lack of coordination between the peripheral-agrarian and the central-urban sectors of the economy - is likely to have been present. This, however, explains only one aspect of economic dualism, i.e. rural retardation. It does not explain the other aspect: urban growth. To understand this

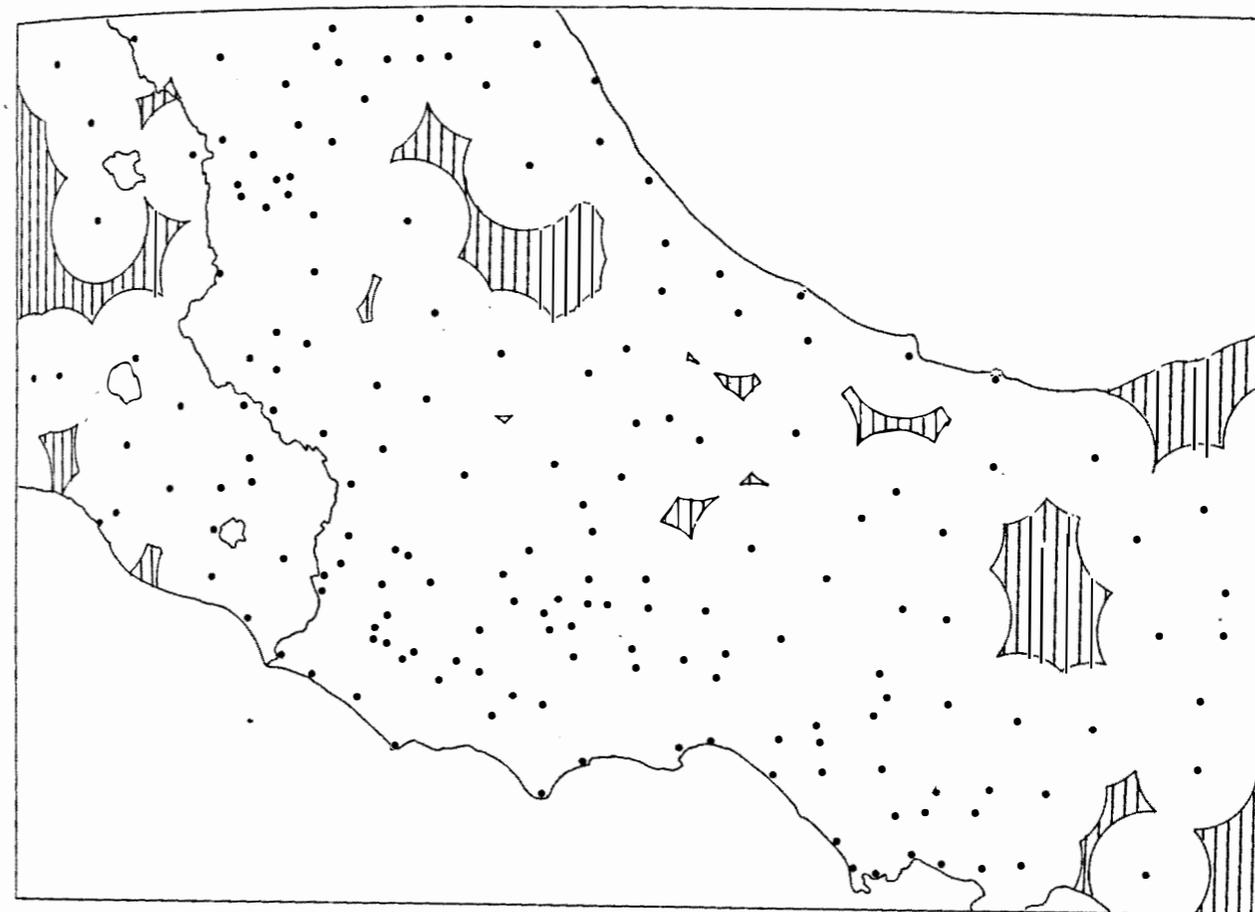


Fig. 8.1 (top): Type A pattern, central Italy
 Fig. 8.2 (bottom): Type B pattern, northern Italy

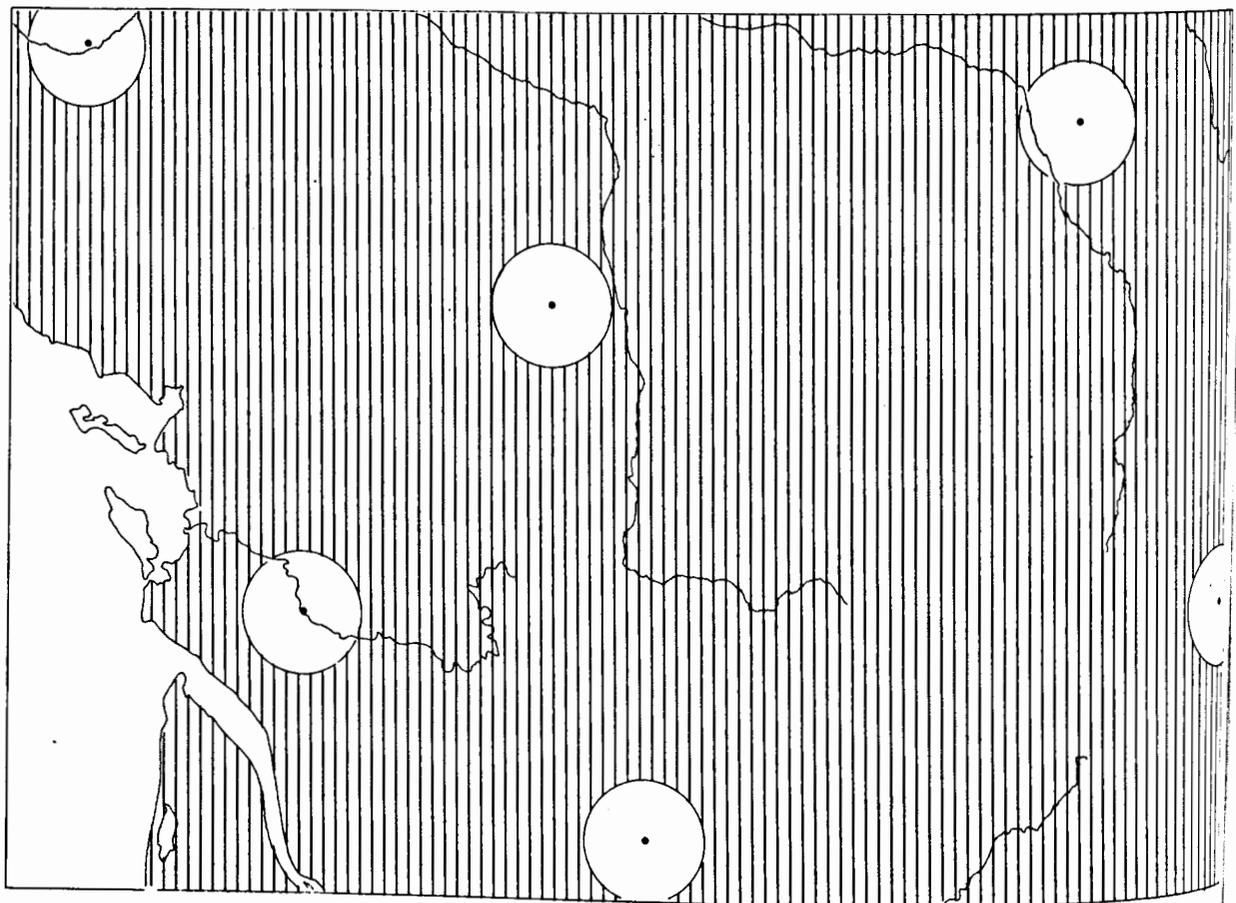
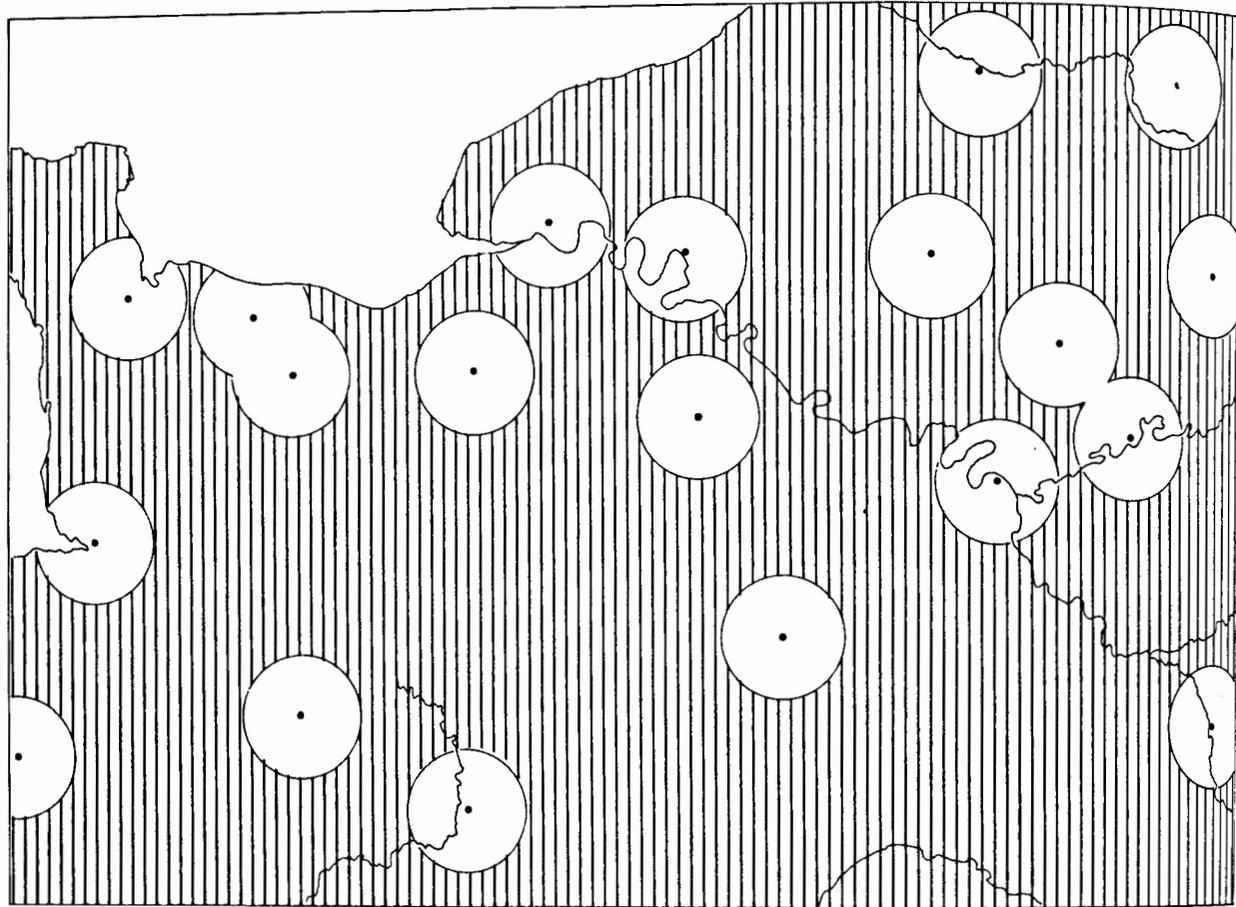


Fig. 8.3 (top): Type C pattern, northern Gaul
 Fig. 8.4 (bottom): Type D pattern, western Gaul

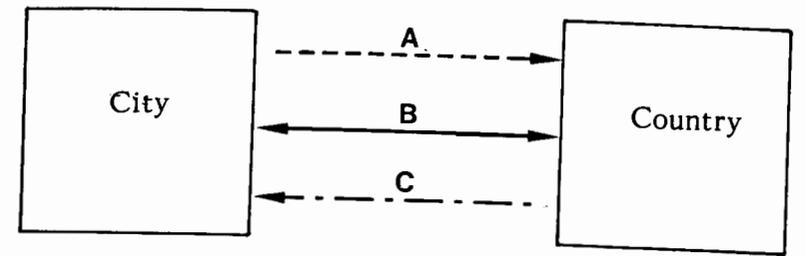


Figure 8.5. A: Urban products and services. B: Coin. C: Rural products.

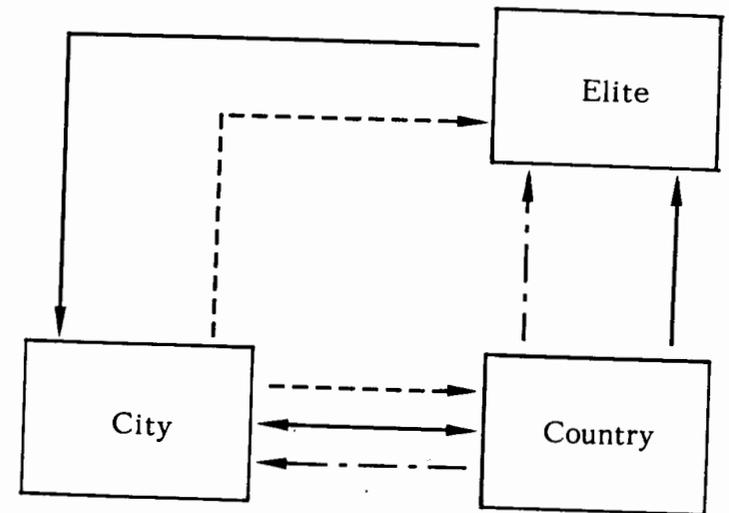


Figure 8.6

aspect of the problem, a closer look at the connection between politico-administrative geography and rural-urban integration is necessary.

In the classic version of Central Place Theory, town and country form complementary parts of one economic system (fig. 8.5). The same situation is found in the ideal *polis*. In real life as lived in Roman Gaul, the situation is rather more complicated. For one thing, the system is not self-sufficient or 'closed' in the sense of General Systems Theory: surplus-value leaves the system in the form of taxes and requisitions, and trade may be carried on with other systems. Another factor to be considered is the rôle of the *élite*, which enjoys an income from its estates in the country while residing part of the year - perhaps the entire year - in the city.

The resulting situation is visualized in figure 8.6. Urban goods and services are exchanged for rural products, but in addition, country dwellers provide the *élite* with rural products and cash. The cash acquired by the *élite* is not likely to have been spent on buying rural products (which were available for nothing on their estates) but on products produced or traded in the city. The money spent there passes into the hands of the urban residents, who may use it to buy rural products.

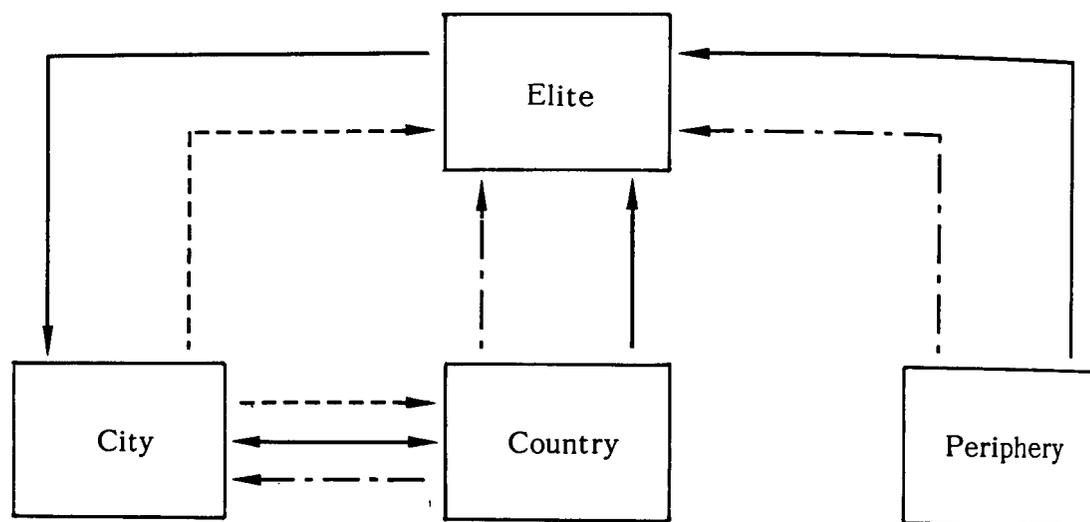


Figure 8.7

Figure 8.7 illustrates a similar situation, but in a civitas territory so large that farmers living at its periphery are de facto prevented from participating in the economic life of the city. Again, coin passes from the rural population to the elite and from there into circulation in the city. From here, through the city-dwellers' purchase of rural products, it passes back into the hands of the farming population. But not all farmers get a share in this: only those living within reach of the city and its produce market. Those who live beyond half a day's distance from the city obtain cash from trade in local markets, at periodic fairs, by means of wage labour in the area where they live - but since that is not where the elite spends its income, cash paid in rents or clientage dues will not filter back to the area when it is spent in the city, regardless of whether it is spent on personal consumption or public building projects.

In short, a continuous transfer of surplus-value takes place from the outlying parts of the civitas to those nearer the town. The growth of the city does not rest solely on its economic interaction with its immediate hinterland, but also on the continuous one-way transfer of cash from the peripheral areas. Given these circumstances, urban growth in the cities does not reflect rural prosperity. More likely, it reflects rural exploitation: the ability of tax-collectors and landowners to extract the greatest possible amount of surplus-value from the farming population.

If this interpretation is correct, then large areas of Roman Gaul may have been characterized by economic dualism. This is further supported by two other observations: the correlation between the size of a city and the size of its territory; and the limited number of new civitas-capitals established from the first to the fourth century AD.

According to N.J.G. Pounds (1969), Tongeren, Trier, Metz, Chartres, Besancon, Avenches, Autun, Bourges, and Toulouse were among the largest cities in Gaul; they were also, as far as we know, centers of very large civitates. Conversely, and again according to Pounds, small cities were prevalent in such densely urbanized areas as northern Gaul, the lower Rhône valley, and Novempopulania. This shows that the potential for urban growth of a Gaulish city depended on the total size of its civitas, not on the area with which it was in immediate day-to-day contact: in other words, it depended on the size of the area from which elite revenues were attracted into the city. It also points to the function of the civitas-capital as a 'primate city' within the civitas.

As mentioned in chapter 7, the total number of civitates in Gaul is not dramatically increased during the three centuries or more separating the first-century sources from the Notitia Galliarum. Some new centers appear, but the overall number is not great and shows considerable regional variation. It is especially significant that the thinly urbanized districts of western and central Gaul see very few new civitas-capitals.

From the viewpoint of classical Central Place Theory, this is nothing less than a paradox. The thinly urbanized plains of western Gaul, where new centers would be unfettered by the competition of existing cities, seem to offer ideal conditions for the development of an integrated urban network. By contrast, the type C pattern of the north should offer poorer opportunities for new centers.

Assuming, however, that economic dualism was prevalent in the western districts, dividing the city and its immediate hinterland from the peripheral area (i.e. the area more than 20 km from the city), the phenomenon becomes explicable. The absence of civitas-capitals - the absence of new economic centers - is accounted for by the low level of economic development possible in an area which is continually drained of its economic surplus by rents and other payments to the elite. This surplus is spent in the city and may eventually find its way back into the rural economic system; but this 'seepage effect' is rapidly diminished as the distance increases. At the same time, the greater the distance from urban centers of consumption, the less incentive does the farmer have to grow cash crops for the market; and the less incentive does rural society as a whole have to develop its social division of labour.

Under such circumstances, the formation of new economic centers (potential civitas-capitals) within type D patterns will be the exception rather than the rule. Within type C patterns, economic conditions will be more favourable; within type B patterns, they will be even better - but here, the dense network of pre-existing cities prevents new centers from carving out a hinterland for themselves.

In short, within a dense pattern of civitas-capitals, urban development is promoted by a high level of economic development but hampered by the competition of neighbouring centers; within a sparse pattern, urban development is hampered by a low level of economic development but protected from competition. This indicates that, other things being equal, conditions for urban development should be optimal in the areas of contact between two types of urban pattern, where the favourable spatial situation of the less dense pattern can be exploited concurrently with the higher level of economic specialization of the denser pattern. This is confirmed by the distribution of new civitas-capitals which, indeed, are often found where type C and D patterns, or type B and C patterns, meet. The exception, as elsewhere, is Novempopulania: here, for special historical reasons, the earliest civitas-capitals did not form foci of élite consumption and never achieved the dominance over neighbouring settlements that civitas-capitals enjoyed in other parts of Gaul.

CONCLUSION:
THE GEOGRAPHY OF POWER

The Roman city had its origins in the east, took shape in central Italy, developed in other parts of Italy and finally spread into large parts of western Europe. Though placed in very different social and geographical milieux, each Roman city retained some of the characteristic features of its Italian forbears: the town plan itself, the sacred and secular buildings (forum, capitolium, basilica, baths); and the organization of city council and duoviri (or quattorviri), which reflected on a lower level the Senate and consuls who ruled the supreme city, Rome itself.

These features, common to Roman cities in Europe and northern Africa - but not to those of the hellenized East - bear witness to the economic potential and organizational capacity of the Empire. To the student of archaeology, urban topography, and architecture, the quasi-standardization of town plans, monuments, and administrative systems is a great help. But to the student of history, the many common features tend to veil the distinctive traits of each city or region: formal uniformity masks real diversity. The Romans, after all, established cities not just for the sake of the cities themselves, but as means to certain economic and administrative ends. Cities were tools of Imperial policy; and one tool may sometimes be used for many different purposes.

In the earliest phase of central Italian urbanization, cities were spaced closely - partly due to the nature of the landscape, partly in order to secure easy access to a place of refuge. This type of urbanization, which we have termed 'type A', could equally well be termed 'primitive' or 'polis-type' urbanization.

To establish and maintain the Roman hegemony over peninsular Italy and, later, in Cisalpine Gaul, numerous colonies were founded. The purpose of the first colonies was mainly strategic (e.g. the maritime colonies on the Tyrrhenian coast); later, they also served to provide landless citizens or demobilized soldiers with land, or to promote the assimilation of non-Roman communities in Italy. On the map of Cisalpine Gaul, we see both factors at work. The locations of some colonies are determined by their strategic relation to highways (e.g. the via Aemilia) or mountain passes; in other cases, the colonies form an even network spaced at a day's journey from each other. In the first case, strategic considerations have been paramount. In the second case, the object has been to settle the greatest possible number of colonists on the fertile plains which form the heart of Cisalpine Gaul.

The greater intercenter distances of Cisalpine Gaul meant that all colonists no longer had easy access to a place of refuge; but with the increase of Roman power, they were less likely to need it. On the other hand, the larger territory subject to each city meant greater economic

possibilities. Indeed, the monumental public buildings of the Cisalpine colonies often surpass those of the older cities south of the Apennines. Previously, we have termed this pattern 'type B': we could also call it 'colonial'. When Transalpine Gaul was incorporated into the Empire, the 'colonial' pattern of urbanization spread into the lower Rhone valley and the lowlands and foothills of southern Gaul. The Elder Pliny's comment that Transalpine Gaul was *Italia verius quam provincia* (118) gives a succinct description of the urban pattern found there.

The Three Gauls, however, posed altogether different problems, since these provinces were unsuited, in extent and in climate, to the policy of assimilation through colonization. A bare minimum of three colonies were founded at strategic points (Lyon, Nyon, Augst). Instead, numerous *civitas*-capitals were established, having the outward form of the Roman city, but a new content. Political stability and economic growth were assured by linking the pattern of *civitates* closely to pre-Roman structures of power and to existing élites. This gave some *civitates* unusually large territories, too large for efficient agricultural exploitation based on the city; but this was beside the point. Unlike the colonies, *civitates* were not founded to facilitate agricultural exploitation of the territory by Roman veterans. Their purpose was to facilitate fiscal exploitation of the inhabitants by Romanized administrators - and the recruitment of soldiers from the Gallic population.

The striking difference between the dense urban pattern of the Po valley (figure 8.2) and the widely spaced *civitas*-capitals of the three Gauls (figure 8.3 - 8.4) is primarily due to diametrically differing goals: in Cisalpine Gaul, to settle as many colonists as possible within a given area - in the Three Gauls, to administer a given area from as few cities as possible. The product of Roman policy in the latter respect is the urban pattern which we denote 'type C' or 'type D'; we could also call this a 'civitas' pattern.

Finally, some instances of 'type D' patterns may be due to the influence of special geographical factors (mountains, forests, deserts): these 'type E' patterns may be called 'marginal' types.

The typology of patterns, then, may be summarized as follows:

Type	Description	Average intercenter distance	Type of exploitation
A	primitive	11 - 16 km	agricultural
B	colonial	21 - 37	agricultural
C	<i>civitas</i>	50 - 75	fiscal
D	<i>civitas</i>	> 90	fiscal
E	marginal	> 90	fiscal

Whatever the type of urban pattern within which it was located, a city had to fulfil both politico-administrative and economic functions. These functions, however, did not have the same range. While half a day's travel was the upper limit to most peasant journeys and thus to the range of economic functions, the greater mobility of the élite gave political functions a greater range. By linking the *civitas* structure to existing tribal centers of power, Roman authorities allowed the latter of these two factors, élite mobility, to determine the density of urbanization. The resulting pattern of cities was not sufficiently dense to integrate all Gaul into the rural-urban division of labour and thus promote economic development in the long run, but it was dense enough to ensure an efficient fiscal exploitation of the country and - by virtue of the concentration of élite consumption in the cities - to dominate peripheral areas economically and prevent the rise of new economic centers to rival the *civitas*-capitals.

Provincial administrators may neither have known nor cared about these effects of Roman policy. To them, the city was an instrument of political domination, not of economic development. For that purpose, the Gallic network of cities served well enough; due to the special economic logic of power, it was a better arrangement than a denser network of cities (which would have meant more units of administration, more administrators, higher costs). The main problem inherent in the system, namely that changes in the economic structure might occasionally produce rival economic centers, could be solved as the need arose by promoting such centers to the status of independent *civitas*-capitals.

The low number of such promotions testifies to the inherent stability of the Gallic *civitas* system. This stability is mainly due to the ability of the original *civitas*-capitals, once they had been established, to dominate the economic geography of Gaul.

Against this background, the growth and monumentalization of Gaulish cities cannot be seen simply as a symptom of 'civilization' and economic growth. In relation to the vast extent of their political hinterlands, the prosperity of many cities does not evoke surprise. Compared to the cities of Cisalpine Gaul or the lower Rhône valley, most cities of the Three Gauls had far greater economic hinterlands; by virtue of élite consumption, they attracted income from an even larger area.

Compared to Cisalpine Gaul or the lower Rhône valley, again, the Three Gauls have far fewer cities per unit of area. This cannot, on any interpretation, be seen as a sign of economic prosperity: rather, it points to the existence of economic dualism and polarized urbanization.

In his study of these phenomena, E.A.J. Johnson points to two main causes: one is the concentration of élites in the cities (119), the other 'the polarizing influence of linear forms of transport facilities' (120). We have previously discussed élite concentration at length, but can linear transport forms - e.g. the famous Roman highways - have played their rôle? On balance, this is hardly likely to have been the case. For one thing, though the highways are best documented, a network of minor roads existed as well. For another, a favourable location at a node in the highway system does not in itself guarantee urban growth. Indeed, the economic

effect of traffic on 'roadside settlements' is probably often over-rated (121). Some of the towns cited as examples of urban growth promoted by traffic are not 'roadside settlements' in the strict sense of the word, but simply settlements which happen to be near a road - and which major settlement in the Roman Empire did not have a road? There are numerous examples, moreover, of towns at key nodes of the transport system or at important points of transshipment, which never achieved independent civitas-status. Even the rise of Orléans or Auxerre may be explained equally well by their favourable overall location in relation to competing economic centers.

The primary factor, and the common factor linking the problem of polarized urbanization in antiquity with similar problems in the contemporary world, remains the social differentiation of geographical mobility: the fact that élite members can move over far greater distances than those lower down in the ranks of society. Further study of this problem will require more evidence, more sophisticated quantitative methods and a more detailed analysis of the correlation between social status and geographical mobility. In this study, the 'élite' has been viewed as a homogeneous group, the non-élite likewise, but no doubt there are important distinctions within both groups, which affect not only social standing but geographical mobility.

NOTES

1. See G.W. Skinner (ed.), The City in Late Imperial China, Stanford 1977.
2. Geo., 4.2.1 and 4.1.13.
3. The view of Klotz (1910) that Strabo's description of Gaul was taken en bloc from a work, now lost, by Timagenes, is no longer accepted. According to Tierney (1960) 207-211, Strabo has borrowed extensively from Posidonius. This view, still held by many scholars, is sharply challenged by Dirkzwager (1975) 5-13, who attributes a larger share of the description to the work of Strabo himself. In his introduction to the Budé edition of Strabo (1966), Lasserre proposes a hypothetical 'panégyriste' as Strabo's main source for Gaul: this theory is also rejected by Dirkzwager.
4. E.g. the triumph of Germanicus in AD 17, at a time when Strabo will have been about eighty years old.
5. Geo., 2.5.11.
6. Geo., 1.1.23
7. Geo., 3.3.3.
8. For a survey of the older literature on the geographical books of the NH, see Sallmann (1971).
9. NH, 3.46.
10. Cf. the younger Pliny, Ep., 3.5.
11. NH, 3.46
12. Thomsen (1947) 21.
13. Sallmann (1971) 201.
14. Vittinghoff (1966) 228.
15. NH, 3.7.
16. NH, 3,23-30.
17. NH, 3.37
18. NH, 3,133.
19. Geo., 4.3.2.

20. Ptol., Geo., 1.18-20.
21. Ptol., Geo., 2.8.
22. Bekker-Nielsen (1988) 155-157.
23. Kubitschek, RE IX, 2338.
24. For the date, It. Burd., 571.6.
25. The pattern of urbanization along the Aemilia deserves a study of its own. The underlying causal factors are presumably of several kinds: 1) the well-known effect of important transport routes on settlement patterns, 2) the alignment of the Aemilia along the northern flank of the Apennines, i.e. along an interface between two complementary economic systems, the foothills to one side, the lowland of the Po valley to the other. In passing, it is interesting to note that the Po itself did not have a similar effect on settlement patterns.
26. Ludwig (1897) 181-182.
27. Walser (1986) 57-58.
28. Buck (1937) 353. The book is supplemented by a second volume containing more detailed statistical information. This volume, printed in China in 1937, has unfortunately not been at my disposal.
29. Spencer (1940) 48.
30. Nissen (1883) II, 15.
31. For a survey of early urbanization in southern Gaul, see Février (1973)
32. Jannoray (1955); Salviat (1974).
33. Labrousse (1969) 92-105.
34. Caesar, BC, 2.50.
35. NH, 3.37; Galsterer-Kröll (1972) nos. 249-271.
36. Clavel (1970) 209; Pliny, NH, 3.33: 'Agatha quondam Massiliensium'
37. Compare other road-station names from the Antonine Itinerary: ad Publicanos, Tabernae, Fines, Stabulum novum.
38. It. Burd., 552.4.
39. Ptol., Geo., 2.10.9.
40. NH, 3.32.

41. Mela, De Chor., 2.84.
42. Ptol., Geo., 2.10.10.
43. Gayraud (1980) nos. 5b, 24, and discussion, pp. 95-96.
44. Barraol (1969) 195-96.
45. NH, 3.32; Ptol., Geo., 2.10.8
46. Richard and Claustres (1980) 125.
47. Cf. Longnon (1878) 442, n.1. Unlike Rivet ((1976)123), I see no decisive objections to the hypothesis that Carpentras had lost its colonial status before its elevation to the status of an episcopal see. According to Eusebius (Ecclesiastical history, 5.1), there were active Christian congregations in Gaul before AD 200 - at which time Carpentras still retained its colonial status - and the foci of Christian activity will naturally have been the more important cities. If Carpentras attained a key position in the, as yet informal, ecclesiastical administration of Gaul, its later loss of secular status need not have prevented its promotion to a formal bishopric when the church administration was formalized at a later date, possibly in the fourth century AD. In the fourth century, there were other episcopal seats without the status of secular civitates (see note 62). Later, when the prosperity or security of the settlement was reduced, the episcopal see will have been transferred to Venasque, retaining the formula 'bishop of Carpentras'.
48. Dio, 53.25.
49. NH, 3.136.
50. Suetonius, Nero, 18.
51. NH, 3.35; Ptol., Geo., 2.10.8; Tacitus, Hist., 2.15.
52. Strabo, Geo., 4.1.3. Ebrodunum (Embrun) and Brigantium (Briancon) are mentioned, but with the epithet κωμη - i.e. Latin vicus, a town which was not self-governing, but subject to another city. Pliny, NH, 3.35; 3.37.
53. Ptol., Geo., 3.1.39-43. Senez is mentioned as a town of the civitas of the Vediantes, together with Cimiez, but it seems likely that, at this date, it had already been separated from Cimiez and made an independent civitas. The mention of Castellane, located between Cimiez and Senez, as independent, certainly points in this direction.
54. CIL XII, 95.
55. CIL XII, 1871.
56. Briancon was considered part of Italy and therefore is not mentioned in the Notitia, Barraol (1969) 340.

57. Genève, see Broise (1974) 67. The date of Grenoble's promotion is probably indicated by its change of name from Cularo to Gratianopolis.
58. The territories of Martigny and Aime are dealt with as parts of Italy in the description of Pliny (NH, 3.135), though they are on the far side of the Alps. In the Notitia Galliarum, they form part of the north Gaulish diocese, and their territories together form the province of Alpes Graiae et Poeninae. At some date previous to the composition of the Notitia Galliarum, the capital of the Alpes Graiae was transferred from Aime to Moûtiers: Walser (1986) 56, n. 123.
59. NH, 4.105-107; Geo., 4.3.4.
60. CIL XIII, 8917.
61. Ptol., Geo., 2.8.14.
62. In Février et al. (1980) 114, Chalon-sur-Saône is assumed to have been independent of the civitas Aeduorum in the fourth century AD, based on the fact that it had a bishop in AD 346 and that Ammianus Marcellinus (11.11) mentions it as one of the five most important towns of the province. Both points clearly demonstrate the importance of Chalon-sur-Saône as an ecclesiastical resp. economic center; but neither indicates that it had reached independent chartered status - 'autonomie administrative civile' - as a civitas.
63. Geo., 4.3.4.
64. NH, 4.106.
65. Kornemann (1901) 337 suggests that we are actually dealing with a list of tribes, used in recruiting soldiers for service in the auxiliary units of the army.
66. Ammianus Marcellinus, 15.11.12.
67. Ptol., Geo., 2.8.7; NH, 4.107.
68. Ptol., Geo., 2.9.10
69. Ptol., Geo., 2.9.11.
70. Ptol., Geo., 2.8.2.
71. Bannert, RE suppl. XV (1978) 852-53.
72. CIL XIII, 3162
73. Already mentioned by Caesar, BG, 7.3.
74. NH, 4.108.

75. Grenier (1934) II, 1, 98; Besnier (1926).
76. Caesar, BG, 1.1.
77. NH, 4.19.
78. Strabo, Geo., 4.2.1-2; Ptol., Geo., 2.7.
79. This problem is disregarded by Bost (1980) as well as Drinkwater (1983). Both assume that, as early as the Augustan period, there were nine civitates (= the novem populi) south of the Garonne. The objections which can be raised against the hypothesis that some 30 civitates existed in the first century AD apply with equal force against this hypothesis. See Bost (1980) 63 and note 20; Drinkwater (1983) 94.
80. Geo., 4.3.2; Tacitus, Annales, 3.44.
81. For an attempt, see Kornemann (1901).
82. Strabo, Geo., 4.2.2; Ptol., Geo., 2.7.20.
83. Ptol., Geo., 2.7.15.
84. CIL V, 875 (Aquileia) mentions a procurator provinciarum Lugdunensis et Aquitanicae item Lactorae in AD 105; see also CIL XIII, 511.
85. Skinner (1977) 305.
86. Skinner (1977) 314.
87. Huvelin (1897) 107-108.
88. Suetonius, Claudius, 12.
89. MacMullen (1970) 334.
90. Pliny, Ep., 5.4.
91. Pliny, Ep., 5.13.
92. Shaw (1981) 47, citing Pliny, Ep., 10.33-34.
93. Frontinus, De aquis urbis Romae, 99.
94. For the fate of some of those which did not, see Bekker-Nielsen (1984) 67-80.
95. Rivet (1976) 123.
96. BG, 1.1.
97. Geo., 4.1.1.

98. NH, 3.18.
99. Deman (1975); for a critique, see Lasserre (1979). Compare also the self-critical remarks of Yves Lacoste in Lacoste (1976) 53-55.
100. Gould (1972) 41.
101. Hopkins (1978) 71.
102. See Wightman (1978) 103 on clientage in Roman Gaul.
103. E.g. in Marguérat (1982).
104. Johnson (1970) 157-162.
105. Johnson (1970) 152-153.
106. Smith (1976) 335-342.
107. Smith (1976) 316-317.
108. Smith (1976) 319, quoted in Slofstra (1983) 96.
109. Smith (1976) 318-319.
110. Smith (1976) 316-317.
111. Slofstra (1983) 96.
112. Smith (1976) 320; note the phrase: "a broad, often international market", and compare 345.
113. On the rôle of sea versus land transport in the Roman world, see Bekker-Nielsen (1988) 149-150.
114. Slofstra argues the case for a dendritic pattern from the dendritic character of the clientage system. This is certainly an important argument for dendritic in the vertical, i.e. social, dimension, but not necessarily in the horizontal dimension. Of course, our evidence for the clientela system comes from other areas of the Empire, not from the periphery of Gaul. As far as the horizontal dimension is concerned, the marketing and urban structure of Gaul would actually, in the terminology of Smith, seem to be 'solar' rather than 'dendritic'; see Smith (1976) 318-319 and figure 1, p. 316.
115. Slofstra (1983) 96.
116. Johnson (1970) tab. 5-1 and 5-2, p. 175.
117. I.e. 8^2 ; 18^2 ; 39^2 ; $64^2 = 64$; 264; 1481; 4096.

118. NH, 3.31.
119. Johnson (1970) 152.
120. Johnson (1970) 153-155.
121. Bekker-Nielsen (1989).

BIBLIOGRAPHY

- Abrams, Philip (1978): 'Towns and Economic Growth: Some Theories and Problems', pp. 9-34 in P. Abrams and E.A. Wrigley (ed.), Towns in Societies. Cambridge.
- Alexander, John W. (1954): 'The Basic-Nonbasic Concept of Urban Economic Functions'. Economic Geography 30 (1954) 246-261.
- Armand-Calliat, L. (1937): Le Chalonnais gallo-romain. Chalon-sur-Saône.
- Bailly, Antoine S. (1975): L'organisation urbaine: théories et modèles. Paris.
- Barruol, Guy (1969): Les peuples préromains du sud-est de la Gaule. (Revue archéologique de Narbonnaise, suppl. 1). Paris.
- Bekker-Nielsen, Tønnes (1984): Bydannelse i det romerske Gallien. Århus.
- Bekker-Nielsen, Tønnes (1988): 'Terra Incognita: The Subjective Geography of the Roman Empire', pp. 148-161 in Erik Christiansen et al. (ed.), Studies in Ancient History and Numismatics. Århus.
- Bekker-Nielsen, Tønnes (1989): 'Rivers and Urban Development in Roman Gaul', pp. 111-122 in J.-F. Bergier (ed.), Montagnes, Fleuves, Forêts dans l'Histoire. St. Katharinen.
- Belshaw, Cyril S. (1965): Traditional Exchange and Modern Markets. Englewood Cliffs, N.J.
- Berry, Brian J.L. (1967): Geography of Market Centers and Retail Distribution. Englewood Cliffs, N.J.
- Bertalanffy, Ludwig von (1968): General System Theory. New York.
- Besnier, Maurice (1926): 'Notes sur les routes de la Gaule Romaine, III: Les milliaires de Poitou'. Revue des études anciennes 28 (1926) 337-351.
- Blache, Jules (1959): 'Sites urbaines et rivières françaises'. Revue géographique de Lyon 34 (1959) 17-55.
- Blalock, Hubert M. (1964): Causal Inferences in Nonexperimental Research. Chapel Hill, N.C.
- Bonnamour, L. (1975): 'Le port gaulois et gallo-romain de Chalon'. Mémoires de la Société historique et archéologique de Chalon 45 (1975) 61-71.
- Bonnard, L. (1913): La navigation intérieure de la Gaule à l'époque Gallo-romaine. Paris.

- Bonnard, Pierre (1977): 'Peopling and the Origins of Settlement', pp. 21-72 in Hugh Clout (ed.), Themes in the Historical Geography of France.
- Bost, J.-P. (1980): 'Spécificité des villes et effets de l'urbanisation dans l'Aquitaine Augustéenne', pp. 61-76 in P.-A. Février and Philippe Leveau (ed.), Villes et campagnes de l'Empire Romaine. Aix-en-Provence.
- Böventer, Edwin von (1969): 'Walter Christaller's Central Places and Peripheral Areas: The Central Place Theory in Retrospect'. Journal of Regional Science 9 (1969) 117-124.
- Broise, Pierre (1974): Genève et son territoire dans l'antiquité. Bruxelles.
- Browning, Clyde E. (1962): 'Primate Cities and Related Concepts', pp. 16-27 in Forrest R. Pitts (ed.), Urban Systems and Economic Development. Eugene, Ore.
- Brush, J.E. (1953): 'The Hierarchy of Central Places in South-Western Wisconsin'. Geographical Review 43 (1953) 380-402.
- Brush, J.E. and H.E. Bracey (1955): 'Rural Service Centers in Southwestern Wisconsin and Southern England'. Geographical Review 45 (1955) 558-569.
- Buck, John Lossing (1937): Land Utilization in China. Shanghai.
- Chastagnol, André (1973): 'Le repli sur Arles des services administratifs gaulois en l'an 407 de notre ère'. Revue historique (1973) 43-40.
- Chevallier, Raymond (1972): Les voies romaines. Paris.
- Childe, V. Gordon (1950): 'The Urban Revolution'. Town Planning Review 21 (1950) 3-17.
- Christaller, Walter (1933): Die zentralen Orte in Süddeutschland. Jena.
- Claval, P. (1966): 'Chronique de géographie économique: la théorie des lieux centraux'. Revue géographique de l'Est 6 (1966) 131-152.
- Clavel, Monique (1970): Béziers et son territoire dans l'antiquité. Paris.
- Clavel, Monique and Pierre Leveau (1971): Villes et structures urbaines dans l'occident romain. Paris.
- Collis, John (1976): 'Town and Market in Iron Age Europe', pp. 3-24 in Barry Cunliffe (ed.), Oppida. Oxford.
- Cüppers, Heinz (1977): 'Die Stadt Trier und die verschiedenen Phasen ihres Ausbaues von der Gründung bis zum Bau der mittelalterlichen Stadtbefestigung', pp. 223-228 in P.-M. Duval and E. Frézouls (ed.), Thèmes de recherche sur les villes antiques de l'Occident. Paris.

- Deman, Albert (1975): 'Matériaux et réflexions pour servir à une étude du développement et du sous-développement dans les provinces de l'Empire romain', pp. 3-97 in Hildegard Temporini et al. (ed.), Aufstieg und Niedergang der römischen Welt, II, 3. Berlin.
- Dihle, Albrecht (1980): 'Plinius und die geographische Wissenschaft in der römischen Kaiserzeit', pp. 121-137 in Tecnologia, Economia e Società nel Mondo Romano. Como.
- Dirkzwager, A. (1975): Strabo über Gallia Narbonensis. (Studies of the Dutch Archaeological and Historical Society, 6). Leiden.
- Drinkwater, John (1983): Roman Gaul. London.
- Duchesne, L. (1892): 'La notice des Gaules est un document d'origine administrative'. Bulletin de la Société nationale des antiquaires de France (1892) 247-252.
- Duncan-Jones, Richard (1982): The Economy of the Roman Empire, Second edition. Cambridge.
- Durkheim, Emile (1893): De la division du travail social. Paris.
- Février, P.-A. (1964): Le développement urbain en Provence. Paris.
- Février, P.-A. (1973): 'The Origin and Growth of the Cities of Southern Gaul to the Third Century A.D.: An Assessment of the Most Recent Archaeological Discoveries'. Journal of Roman Studies 63 (1973) 3-28.
- Février, P.-A. et al. (1980): La ville antique des origines au IXe siècle. (La France Urbaine, I). Paris.
- Février, P.-A. (1983): 'Villes et campagnes des Gaules sous l'Empire'. Ktéma 6 (1983) 359-372.
- Finley, M.I. (1973): The Ancient Economy. London.
- Finley, M.I. (1977): 'The Ancient City: from Fustel de Coulanges to Max Weber and Beyond'. Comparative Studies in Society and History 19 (1977) 305-327.
- Frei-Stolba, R. (1977): 'Die römische Schweiz: Ausgewählte staats- und verwaltungsrechtliche Probleme im Frühprinzipat', pp. 28-403 in Hildegard Temporini et al. (ed.), Aufstieg und Niedergang der römischen Welt, II, 5. Berlin.
- Frézouls, E. (1974): 'L'Empire romain et la cité: Réflexions sur la politique de l'urbanisation'. Actes du 95e congrès national des sociétés savantes (1970) 43-48.
- Galsterer-Kröll, Brigitte (1972): 'Untersuchungen zu den Beinamen der Städte des Imperium Romanum', Epigraphische Studien 9 (1972) 44-145.
- Gayraud, Michel (1980) 'Les inscriptions de Ruscino', pp. 67-98 in Barruol, Guy (ed.), Ruscino I (Revue archéologique de Narbonnaise, suppl. 7). Paris.
- Gould, J.D. (1972): Economic Growth in History. London.
- Grenier, Albert (1934): Manuel d'archéologie Gallo-romaine II, 1: Les routes. Paris.
- Harries, Jill (1978): 'Church and State in the Notitia Galliarum'. Journal of Roman Studies 68 (1978) 26-43.
- Hering, Wolfgang (1970): 'Geographie und römische Politik. Bemerkungen zur Beschreibung Galliens bei Strabon.' Acta Classica Universitatis Scientiarum Debrecensis 6 (1970) 45-51.
- Hirschfeld, O. (1896): 'Aquitaniens in der Römerzeit'. Sitzungsberichte der Berliner Akademie der Wissenschaften (1896) 441ff.
- Hodder, Ian (1972): 'Locational Models and the Study of Romano-British Settlement', pp. 887-909 in David L. Clarke (ed.), Models in Archaeology. London.
- Hodder, Ian (1975). 'The Spatial Distribution of Small Towns', pp. 67-74 in Warwick Rodwell and Trevor Rowley (ed.), Small Towns of Roman Britain. Oxford.
- Hodder, Ian and M.W.C. Hassall (1971): 'The Non-Random Spacing of Romano-British Walled Towns.' Man n.s. 6 (1971) 391-407.
- Hopkins, Keith (1978): 'Economic Growth and Towns in Classical Antiquity', pp. 35-78 in Philip Abrams and E.A. Wrigley (ed.), Towns in Societies. Cambridge.
- Hoselitz, Bert F. (1953): 'The Role of Cities in the Economic Growth of Underdeveloped Countries'. Journal of Political Economy 61 (1953) 195-208.
- Huvelin, P. (1897): Essai historique sur le droit des marchés et des foires. Paris.
- Jannoray, Jean (1955): Ensérune. Paris.
- Jefferson, Mark (1939): 'The Law of the Primate City'. Geographical Review 29 (1929) 226-232.
- Johnson, E.A.J. (1970): The Organization of Space in Developing Countries. Cambridge, Mass.
- Johnston, R.J. (1980): City and Society. London.
- Jones, A.H.M. (1964): The Later Roman Empire. London.

- Klotz, Alfred (1910): Cäsarstudien. Nebst einer Analyse der Strabonischen Beschreibung von Gallien und Britannien. Leipzig.
- Kolb, Frank (1984): Die Stadt im Altertum. München.
- König, Ingemar (1970): Die Meilensteine der Gallia Narbonensis (Itinera Romana, 3). Bern.
- Kornemann, Ernst (1901): 'Die Zahl der gallischen Civitates in der römischen Kaiserzeit'. Klio 1 (1901) 331-348.
- Labrousse, Michel (1968): Toulouse antique. Paris.
- Lacoste, Yves (1965, 1976): Géographie du sous-développement: géopolitique d'une crise. First edition, 1965; third edition, 1976. Paris.
- Lacoste, Yves (1977): 'Self-Critical Reflections and Critique of "A Geography of Underdevelopment"'. Antipode 9 (1977) 117-124.
- Langhammer, W. (1973): Die rechtliche und soziale Stellung der Magistratus Municipales und der Decuriones in der Übergangsphase der Städte von sich selbstverwaltenden Gemeinden zu Vollungsorganen des Spätantiken Zwangsstaates. Wiesbaden.
- Lavedan, Pierre (1926): Histoire de l'urbanisme: Antiquité - Moyen Age. Paris.
- Lasserre, J.-M. (1979): 'Rome et le "sous-développement" de l'Afrique'. Revue des études anciennes 81 (1979) 67-104.
- Leclercq, Henri (1936): 'Notitia Galliarum', col. 1717-1727 in Dictionnaire d'archéologie Chrétienne et de Liturgie, vol. 12. Paris.
- LeLannou, M. (1977): 'Le rôle des communications fluviales dans la genèse et développement des villes antiques', pp. 29-34 in P.-M. Duval and E. Frézouls (ed.), Thèmes de recherche sur les villes antiques de l'occident. Paris.
- Leoty, Bernadette (1972): 'Recherches sur la topographie rëmoise dans l'antiquité', pp. 33-44 in Les villes. Contribution a l'étude de leur développement en fonction de l'évolution économique. Reims.
- Levi, Annalina and Mario (1967): Itineraria Picta. Contributo allo studio della Tabula Peutingeriana. Roma.
- Longnon, Auguste (1878): Géographie de la Gaule au VIe siècle. Paris.
- Lorenz, Thuri (1987): Römische Städte. Darmstadt.
- Lösch, August (1940): Die räumliche Ordnung der Wirtschaft. Jena.
- Ludwig, Friedrich (1897): Untersuchungen über die Reise- und Marschgeschwindigkeit im XII. und XIII. Jahrhundert. Berlin.
- MacMullen, Ramsay (1970): 'Market-Days in the Roman Empire'. Phoenix 24 (1970) 333-341.
- Mahn, Christa (1980): Periodische Märkte und zentrale Orte - Raumstrukturen und Verflechtungsbereiche in Nord-Ghana. Heidelberg.
- Marguërat, Yves (1982): 'Les reseaux urbains en Afrique Noire: de la pyramide à la macrocéphalie'. Bulletin de la Société Languedocienne de Géographie (1982) 19-28.
- Marx, Karl (1858): Pre-Capitalist Economic Formations, translated by Jack Cohen with an introduction by E.J. Hobsbawm. London (1964).
- Mommsen, Theodor (1892): (Introduction to) 'Notitia Galliarum', pp. 552-582 in Monumenta Germaniae Historica, Chronica Minora, 1. Hannover.
- Monguilan, Louis (1985): 'Aspects de l'urbanisation en Narbonnaise'. Caesarodunum 20 (1985) 165-171.
- Morrill, Richard L. (1974): The Spatial Organization of Society. North Scituate, Mass.
- Nash, Daphne (1976): 'The Growth of Urban Society in France', pp. 95-134 in Barry Cunliffe (ed.), Oppida. Oxford.
- Nesselhauf, Herbert (1938): 'Die spätrömische Verwaltung der gallisch-germanischen Länder'. Abhandlungen der Preussischen Akademie der Wissenschaften (Ph.-Hist. Klasse) 1938/2 (1938).
- Nissen Heinrich (1883): Italische Landeskunde I-II. Berlin (1883-1902).
- Ørsted, Peter (1985): Roman Imperial Economy and Romanization. Copenhagen.
- Pirenne, Henri (1925): Medieval Cities: Their Origins and the Revival of Trade. Princeton.
- Pirenne, Henri (1939): Les villes et les institutions urbaines. Paris.
- Pounds, N.J.G. (1969): 'The Urbanization of the Classical World'. Annals of the Association of American Geographers 59 (1969) 135-157.
- Pounds, N.J.G. (1973): An Historical Geography of Europe, 450 BC - AD 1330. Cambridge.
- Redfield, Robert and M.E. Singer (1954): 'The Cultural Rôle of Cities'. Economic Development and Cultural Change 3 (1954) 53-73.
- Reece, Richard (1986): 'Cirencester: The Central Place of the First Millennium AD', pp. 41-44 in Eric Grant (ed.), Central Places, Archaeology and History. Sheffield.

- Reynolds, Joyce M. (1966): 'Legal and Constitutional Problems', pp. 70-75 in John Wacher (ed.), The Civitas Capitals of Roman Britain. Leicester.
- Richard, Jean-Claude-Michel and Georges Claustres (1980): 'Les monnaies de Ruscino', pp. 107-150 in Guy Barrauol (ed.), Ruscino I (Revue Archéologique de Narbonnaise, suppl. 7). Paris.
- Rivet, A.L.F. (1976): 'The Notitia Galliarum: Some Questions', pp. 119-154 in Roger Goodburn (ed.), Aspects of the Notitia Dignitatum. Oxford.
- Rostovtzeff, M.I. (1957): The Social and Economic History of the Roman Empire. 2nd ed., rev. by P.M. Fraser. Oxford.
- Roymans, Nico (1983): 'The North Belgic Tribes in the 1st Century B.C.: A Historical-Anthropological Perspective.', pp. 43-69 in Roel Brandt and Jan Slofstra (ed.), Roman and Native in the Low Countries. Oxford.
- Sallmann, K. (1971): Die Geographie des älteren Plinius in ihrem Verhältnis zu Varro. Berlin.
- Salviat, Francois (1974): Entremont. Aix-en-Provence.
- Shaw, Brent D. (1981): 'Rural Markets in North Africa and the Political Economy of the Roman Empire'. Antiquités Africaines 17 (1981) 37-83.
- Singh, Shiw Mangal (1965): 'The Stability Theory of Rural Central Place Development'. National Geographical Journal of India 11 (1965) 13-21.
- Sjoberg, Gideon (1965): 'Cities in developing and in industrial societies: A cross-cultural analysis', pp. 213-263 in Philip M. Hauser and Leaf F. Schnore (ed.), The Study of Urbanization. New York.
- Sjoberg, Gideon (1967): 'The Origin and Evolution of Cities', pp. 33-48 in Kingsley Davis et al., Cities. London.
- Skinner, G.W. (1964): 'Marketing and Social Structure in Rural China'. Journal of Asian Studies 24 (1964-65) 3-42; 195-228; 363-399.
- Skinner, G.W. (1977): 'Cities and the Hierarchy of Local Systems', pp. 275-352 in G.W. Skinner (ed.), The City in Late Imperial China. Stanford.
- Slofstra, Jan (1983): 'An Anthropological Approach to the Study of Romanization Processes', pp. 71-104 in Roel Brandt and Jan Slofstra (ed.), Roman and Native in the Low Countries. Oxford.
- Smith, Adam (1776): An Inquiry into the Nature and Causes of the Wealth of Nations. Oxford (1976).

- Smith, Carol A. (1976): 'Exchange Systems and the Spatial Distribution of Elites: The Organization of Stratification in Agrarian Societies', pp. 309-374 in Carol A. Smith (ed.), Regional Analysis II: Social Systems. New York.
- Smith, M.G. (1972): 'Complexity, Size, and Urbanization', pp. 567-574 in P.J. Ucko, Ruth Tringham and John Dimbleby: Man, Settlement and Urbanism. London.
- Sombart, Werner (1916): Der Moderne Kapitalismus. München.
- Spencer, J.E.: 'The Szechwan Village Fair'. Economic Geography 16 (1940) 39-58.
- Stahl, Michael (1978): Imperiale Herrschaft und provinzielle Stadt. Göttingen.
- Thomsen, Rudi (1947): The Italic Regions from Augustus to the Lombard Invasion. Copenhagen.
- Trigger, Bruce (1972): 'Determinants of Urban Growth in Pre-Industrial Societies', pp. 575-599 in P.J. Ucko, Ruth Tringham and G.W. Dimbleby (ed.), Man, Settlement and Urbanism. London.
- van Berchem, D. (1977): 'Réflexions sur la dynamique du développement des villes antiques', pp. 21-28 in P.-M. Duval and E. Frézouls (ed.), Thèmes de recherche sur les villes antiques de l'occident. Paris.
- Vance, James E. (1970): The Merchant's World: The Geography of Wholesaling. Englewood Cliffs, N.J.
- Vittinghoff, Friedrich (1966): 'Zur vorcaesarischen Siedlungs- und Städtepolitik in Nordafrika', pp. 225-233 in Corolla Memoriae Erich Swoboda Dedicata. Graz.
- Walser, Gerold (1976): Via per Alpes Graias. (Historia, Einzelschriften 48). Stuttgart.
- Walthew, C.V. (1982). 'Early Roman Town Development in Gallia Belgica: a Review of Some Problems'. Oxford Journal of Archaeology 1 (1982) 225-236.
- Wankenne, A. (1976). 'Les vici de Belgique'. Caesarodunum 11 (1976).
- Watt, John R. (1977): 'The Yamen and Urban Administration', pp. 353-390 in G.W. Skinner (ed.), The City in Late Imperial China. Stanford.
- Wightman, E.M. (1970): Roman Trier and the Treveri. New York.
- Wightman, E.M. (1976): 'Le vicus dans le contexte de l'administration et de la société gallo-romaine: quelques réflexions'. Caesarodunum 11 (1976) 59-64.

Wightman, E.M. (1978): 'Peasants and Potentates: An Investigation of Social Astructure and Land Tenure in Roman Gaul'. American Journal of Ancient History 3 (1978) 97-128.

Wolff, Hartmut (1976): 'Kriterien für latinische und römische Städte in Gallien und Germanien und die "Verfassung" der gallischen Stammesgemeinden'. Bonner Jahrbücher 176 (1976) 45-121.

APPENDIX I

THE CITIES OF ITALY IN THE FIRST CENTURY AD ACCORDING TO PLINY

Region I (Latium and Campania)

Ostia	Ostia
Laurentum	Laurentum
Ardea	Ardea
Antium	Anzio
Cercei	M. Circeo
Tarracina	Terracina
Formiae	Fōrmia
Minturnae	Minturno
Sinuessa	Sinuessa
Liternum	Marina di Lago di Patria
Cumae	Cumae
Puteoli	Pozzuoli
Neapolis	Napoli
Herculaneum	Ercolano
Pompei	Pompeii
Nuceria	Nocera
Surrentum	Sorrento
Capua	S.M. Capua Vetere
Aquinum	Aquino
Suessa	Sessa Aurunca
Venafrum	Venafro
Sora	Sora
Teanum Sidicinum	Teano
Nola	Nola
Abellinum	Avellino
Aricia	Ariccia

Acerrani	Acerra
Allifani	Alife
Atinates	Atina
Aletrinales	Alatri
Anagnini	Anagni
Atellani	Orta di Atella
Aefulani	Castel S. Angelo
Arpinates	Arpino
Auximates	Not identified
Abellani	Avella
Alfaterni	Not identified
Bovillae	Castelgandolfo
Caiatiae	Caiazzo
Casinum	Cassino
Calenum	Not identified
Capitulum Hernicum	Piglio
Cereatini	Casamari
Corani	Cori
Cubulterini	S. Ferdinando near Alvignano
Castrimoenienses	Marino
Cingulani	Not identified
Fabienses	Not identified
Foropolienses	Francolise
Frusinates	Frosinone
Ferentinales	Ferentino
Freginales	Maccarese (also found in list VII)
Fabraterni Veteres	Falvaterra
Fabraterni Novi	Ceccano
Ficolenses	S. Alessandro (Via Nomentana)
Fregellani	Ceprano
Forum Appi	Faiati near Latina
Forentani	Not identified
Gabini	Gabii
Interamnates Succasini	Pignataro Interamna
Ilionenses	Not identified

Lanivini	Lanuvium
Norbani	Norma
Nomentani	Mentana (also in list IV)
Praenestini	Palestrina
Privernates	Priverno
Setini	Sezze
Signini	Segni
Suessulani	Cancello
Telesini	Telese
Trebulani	Treglia
Trebani	Trevi nel Lazio
Tusculani	Frascati
Verulani	Vérolí
Veliterni	Velletri
Ulubrenses	Cisterna
Urbanates	near Borgo Appio
Roma	Roma

Region II (Apulia)

Uria Messapia	Oria
Sarmadium	Not identified
Senum	Not identified
Anxa	Gallipoli
Basta	Vaste
Hydruntum	Otranto
Fratuertium	Not identified
Lupia	Lecce
Balesium	Valésio
Caelia	Ceglie
Brundisium	Bríndisi
Rudiae	Ruzzi
Egnatia	Egnazia
Barium	Bari

Salapia	Salápia
Sipontum	Manfredonia
Teanum	S. Paolo di Civitate
Larinum	Larino
Luceria	Lucera
Venusia	Venosa
Canusium	Canosa
Arpi	Arpi
Beneventum	Benevento
Ausculani	Ascoli Satriano
Aquiloni	Lacedonia
Compsani	Conza della Campania
Caudini	Montesarchio
Ligures Corneliani	Circello
Ligures Baebiani	Not identified
Vescellani	Not identified
Aeclani	Mirabella Eclano
Aletrini	Not identified
Atrani	Not identified
Aecani	Not identified
Alfellani	Not identified
Borcani	Not identified
Collatini	Not identified
Corinenses	Not identified
Cannenses	Canne
Dirini	Monópoli
Forentani	Not identified
Genusini	Ginosa
Herdonienses	Ordona
Irini	Not identified
Merinates (Matinates)	Mattinata
Mateolani	Not identified
Neretini	Not identified
Natini	Not identified
Rubustini	Ruvo di Puglia
Silvini	Gravina in Puglia

Strapellini	Not identified
Turnantini	Not identified
Vibinates	Bovino
Ulurtini	Not identified
Aegetini (Azetini)	Rutigliano
Apamestini	Not identified
Argentini	Not identified
Butuntinienses	Bitonto
Deciani	Not identified
Grumbestini	Grumo Appula
Norbanenses	Conversano
Palionenses	Not identified
Stulnini	Not identified
Tutini	Not identified
Aletini	Alezio
Basterbini	see Basta
Neretini	Not identified
Uzentini	Ugento
Veretini	Patú

Region III (Lucania and Bruttium)

Paestum	Pesto (Paestum)
Elea (Velia)	Castellammare di Vélia
Buxentum	Policastro
Blanda	Maratea
Tempsa	Torre del Casale near Nocera
Consentia	Cosenza
Vibo Valentia	Vibo Valéntia
Tauroentum	Taureana
Rhegium	Réggio di Calabria
Mustiae	Not identified
Scolagium	Squillace
Petilia	Strongoli
Croto	Crotone

Thurii	Thúrio
Heraclea	Policoro
Metapontum	Metaponto
Aprustani	Not identified
Atinates	Atena Lucana
Bantini	Banzi
Eburini	Eboli
Grumentini	Grumento
Potentini	Potenza
Sontini	Sanza
Sirini	Not identified
Tergilani	Not identified
Ursentini	Not identified
Volcentani	Not identified

Region IV (Samnium)

Histonium	Vasto
Buca	Térmoli
Hortona	Ortona
Anxani Frentani	Lanciano
Caretini	Not identified
Lanuenses (Juvanenses)	Iuvanum
Teatini	Chieti
Corfinienses	Corfinio
Superaequani	Castelvecchio Subequo
Sulmonenses	Sulmona
Anxatini	Not identified
Antinates	Civita d'Antino
Fucentes	Identical with Alba? Thomsen (1947) 105.
Lucenses	Luco dei Marsi
Marruvini	S. Benedetto dei Marsi
Alba	Alba Fucens (Albe)
Cliternini	Capradosso

Carseolani	Carsóli
Angulani	Spoltore
Pennenses	Penne
Peluinates	S. Paolo di Peluino
Aufinates Cismontani	Ofena
Bovianum vetus	Pietrabbondante
Bovianum Undecumanorum	Bojano
Aufidenates	Alfedena
Aesernini	Isérnia
Fagifulani	Montágano
Ficolenses	Not identified
Saepinates	Altília near Sepino
Tereventinates	Trivento
Amiterni	Amiternum
Cureses	Correse
Forum Deci	Bacugno
Forum Novum	S. Maria in Vescovio
Fidenates	Fidenae
Interamnates	Not identified
Nursini	Nórcia
Nomentani	Mentana (also in list I)
Reatini	Rieti
Trebulani Mutuesci	Monteleone Sabino
Trebulani Suffenates	Not identified
Tiburtes	Tivoli
Tarinates	Not identified

Region V (Picenum)

Hadria	Atri
Castrum Novum	Giulianova
Truentum	Colonnella
Cupra (Maritima)	Cupra Marítima
Castellum Firmanorum	i.e. Firmum (Fermo), see Nissen (1883) II, 424 n. 2.

Asculum
Novana
Cluana
Potentia
Numana
Ancona
Auximates
Beregrani
Cingulani
Cuprenses Montani
Falarienses
Pausulani
Planinenses
Ricinenses
Septempedani
Tollentimates
Treenses
Urbesalvia

Region VI (Umbria)

Senagallia
Fanum Fortunae
Pisaurum
Hispellum
Tuder
Amerini
Attidates
Asisinates
Arnates
Aesinates
Camertes
Casuentillani
Carsulani
Dolates Sallentini

Ascoli Piceno
Not identified
Not identified
S. Maria in Potenza
Numana
Ancona
Osimo
Not identified
Cingoli
Cupramontana
(Piane di) Falerone
S. Claudio al Chienti
Monteroberto
Hélvia Ricina
S. Maria di Pieve by S. Severino
Tolentino
Tréia
Urbisaglia

Senigállia
Fano
Pésaro
Spello
Tódi
Amélia
Attiglio
Assisi
Civitella d'Arno
Iesi
Camerino
Not identified
S. Gémini Fonte
Not identified

Fulginiates
Foroflamienses
Foroiulienses
Forobrentani
Forosempronenses
Iguini
Interamnates
Mevanates
Mevanionenses
Matilicates
Narnienses
Nucerini
Otriculari
Ostrani
Pitulani Pisuertes
Pitulani Mergentini
Plestini
Sentimates
Sassini
Spoletini
Suasani
Sestimates
Suillates
Tadimates
Trebiates
Tuficani
Tifernates Tiberini
Tifernates Metaureses
Vesinicates
Urbanates Metaureses
Urbanates Hortenses
Vettonenses
Vindimates
Visuentani

Foligno
S. Giovanni Profiamma
Not identified
Not identified
Fossombrone
Gubbio
Terni
Bevagna
Galeata
Matélica
Narni
Nocera
Otricoli
Ostra Antica
Macerata Féltria
Acqualagna
S. M. di Pistia
Sassoferrato
Sarsina
Spoleto
Castelleone di Suasa
Sestino
Not identified
Gualdo Tadino
Trevi
Borgo Tufico
Città di Castello
S. Angelo in Vado
Not identified
Urbino
Collemancio
Bettona
Not identified
Not identified

Region VII (Etruria)

Luna	Luni
Luca	Lucca
Pisae	Pisa
Populonium	Populonia
Cosa Volcientium	Cosa
Graviscae	Porto Clementino
Castrum Novum	S. Marinella
Pyrgi	Pyrgi
Caere	Cervéteri
Alsium	Palo
Fregenae	Maccarese (also in list I)
Falisca	Falerii novi
Lucus Feroniae	Rignano
Rusellana	Grosseto
Senienses	Siena
Sutrina	Sutri
Arretini	Arezzo
Amitienses	Not identified
Aquenses Taurini	Terme Taurine near Civitavecchia
Blerani	Blera
Cortonenses	Cortona
Capenates	Capena
Clusini	Chiusi
Florentini	Firenze
Faesulae	Fiesole
Ferentinum	Ferento
Fescennia	Not identified
Hortanum	Orte
Herbanum	Not identified
Nepeta	Nepi
Novem pagi	Not identified
Praefectura Claudia Foroclori	Manziana
Pistorium	Pistoia

Perusia
Suanenses
Saturnini
Subertani
Statonienses
Tarquinienses
Tuscanienses
Vetulonienses
Veientani
Vesentini
Volterrani
Volcentani
Volsinienses

Perugia
Sovana
Saturnia
Not identified
Pitigliano
Tarquinia
Tuscânia
Vetulonia
Veio
Not identified
Volterra
Vulci
Bolsena

Region VIII (Aemilia)

Ariminum
Ravenna
Butrium

Bononia
Brixillum
Mutina
Parma
Placentia
Caesena
Claterna
Forum Clodi

Forum Livi
Forum Popili
Forum Truentinorum

Forum Corneli
Forum Licini

Rimini
Ravenna
6 miles N of Ravenna
according to Tab.Peut.
Bologna
Brescello
Módena
Parma
Piacenza
Cesena
Quaderne
Probably identical to Forum Novum
(Fornovo), cf. Nissen (1883)
II, 268 n. 10.
Forlí
Forlimpópoli
Not certainly identified.
Bertinoro? (CIL XI, 112)
Imola
Not identified

Faventini
Fidentini
Otesini
Padinates
Regienses a Lepido
Solonates
Saltus Galliani .. Aquinates
Tannetani
Veleiates
Urbanates

Region IX (Liguria)

Album Intimilium
Album Ingaunum
Genua
Segesta Tigulliorum
Libarna
Dertona
Iria
Vardacate
Industria
Pollentia
Correa
Forum Fulvi .. Valentinum
Aug. Bagiennorum
Alba Pompeia
Hasta
Aquae Statiellorum
(Cemenelum)

Faenza
Fidenza
Sant'Agata
Bondino
Reggio nell'Emilia
Sogliano
Not identified
Tenedo
Velléia (Villa)
Not identified

Ventimiglia
Albenga
Genova
Sestri Levante
Serravalle
Tortona
Voghera
Terruggia
Monteu da Po
Pollenza
Chieri
Valenza
Bene
Alba
Asti
Acqui
(Cimiez, on the French side of the Alps)

Region X (Venetia)

Altinum
(Julia) Concordia
Aquileia
Tergeste
Cremona
Brixia
Ateste
Acelum
Patavium
Opitergium
Velunum (Bellunum)
Vicetia
Mantua
Feltini (Feltria)
Tridentini
Beruenses
Verona
Iulienses Carnorum
Forojulienses
Foretani
Querqueni
Tarvisani
Togienses

Altino
Concórdia Sagittaria
Aquileia
Trieste
Cremona
Brescia
Este
Asolo
Padova
Oderzo
Belluno
Vicenza
Mantova
Feltre
Trento
Not identified
Verona
Zuglio
Cividale del Friuli
Not identified
Not identified
Treviso
Not identified

(Further, this list includes four cities in Istria and six on the coast of Illyria).

Region XI (Transpadana)

Aug. Taurinorum
Forum Vibi
Segusio
Aug. Praetoria

Torino
Saluzzo
Susa
Aosta

Eporedia	Ivrea
Vercellae	Vercelli
Novaria	Novara
Ticinum	Pavia
Laus Pompeia	Lodi
Mediolanum	Milano
Comum	Como
Bergamum	Bergamo
Forum Licini	Not identified. Also found in list VIII.

Note

Modern place-names (right-hand column) are given in the form used on the TCI map of Italy, 1:200.000.

APPENDIX II

THE CITIES OF GAUL IN THE EARLY FIRST CENTURY AD
ACCORDING TO PLINY AND STRABO

Narbonensis, Maritime Alps and Alpes Graiae

Narbo	Narbonne
Baeterrae	Béziers
Nemausus	Nîmes
Aquae Sextiae	Aix-en-Provence
Maritima	near Martigues
Forum Iulii	Fréjus
Antipolis	Antibes
Reii	Riez
Cabellio	Cavaillon
Aven(n)io	Avignon
Apta Iulia	Apt
Arausio	Orange
Carpentorate	Carpentras
Vasio	Vaison
Augusta Tricastinorum	St-Paul-trois-Chateaux
Alba Helviorum	Aps
Valentia	Valence
Vienna	Vienne
Arelate	Arles
Massilia	Marseille
Ruscino	Castel Roussillon
Luteva	Lodève
Tolosa	Toulouse
Cemenelum	Cimiez
Dinia	Digne
Ceutrones	Aime

Aquitania

Arverni
Bituriges Cubi
Bituriges Vivisci
Gabali
Lemovices
Nitiobriges
Petrocorii
Pictones
Ruteni
Santones
Vellavi
Ausci
Convenae
Tarbelli
Cadurci

Clermont-Ferrand
Bourges
Bordeaux
Javols
Limoges
Agen
Pèrigueux
Poitiers
Rodez
Saintes
St-Paulien
Auch
St-Bertrand-de-Comminges
Dax
Cahors

Lugdunensis (Celtica)

Abrincatui
Andecavi
Auleri Cenomanni
Auleri Diablintes
Auleri Ebuovices
Baioicasses
Carnutes
Coriosolites
Aedui
Lexovii
Meldi
Namnetes
Osisimii
Parisii

Avranches
Angers
Le Mans
Jublains
Evreux
Bayeux
Chartres
Corseul
Autun
Lisieux
Meaux
Nantes
Carhaix
Paris

Redones
Lugdunum
Senones
Tricasses
Turones
Veliocasses
Venelli
Viducasses
Segusiavi
Caleti
Veneti

Rennes
Lyon
Sens
Troyes
Tours
Rouen
Carentan
Vieux
Feurs
Lillebonne
Vannes

Belgica and the Alpes Poeninae

Ambiani
Atrebates
Bellovaci
Helvetii
Noviodunum
Leuci
Mediomatrici
Tungri
Col. Claudia Ara
Agrippinensium
Morini
Menapii
Nervii
Remi
Sequani
Silvanectes
Suessiones
Treveri
Veromandui
Augusta Rauracorum
Vallenses

Amiens
Arras
Beauvais
Avenches
Nyon
Toul
Metz
Tongeren
Köln
Thérouanne
Cassel
Bavai
Reims
Besancon
Senlis
Soissons
Trier
St-Quentin
Augst
Martigny

Nemetes
Triboci
Vangiones
Lingones

Speyer
Brumath
Worms
Langres

Note

Modern place-names (right-hand column) are given in the form used on the IGN map of France, 1:100.000.

APPENDIX III

THE CITIES OF GAUL IN THE LATE FOURTH CENTURY AD
ACCORDING TO THE NOTITIA GALLIARUM

First-century list	Notitia Galliarum
	<u>Lugdunensis prima</u>
Lyon	Lyon
Feurs	-
Autun	Autun
Langres	Langres
	<u>Lugdunensis secunda</u>
Rouen	Rouen
Lillebonne	-
Bayeux	Bayeux
Avranches	Avranches
Vieux	-
Evreux	Evreux
-	Sééz
Lisieux	Lisieux
Carentan	Coutances
	<u>Lugdunensis tertia</u>
Tours	Tours
Le Mans	Le Mans
Rennes	Rennes
Angers	Angers
Nantes	Nantes
Corseul	Corseul
Vannes	Vannes
Carhaix	Carhaix
Jublains	Jublains

	<u>Lugdunensis Senonia</u>
Sens	Sens
Chartres	Chartres
-	Auxerre
Troyes	Troyes
-	Orléans
Paris	Paris
Meaux	Meaux
	<u>Belgica prima</u>
Trier	Trier
Metz	Metz
Toul	Toul
-	Verdun
	<u>Belgica secunda</u>
Reims	Reims
Soissons	Soissons
-	Chalons-sur-Marne
St.-Quentin	St.-Quentin
Arras	Arras
Bavai	Cambrai
Cassel	Tournai
Senlis	Senlis
Beauvais	Beauvais
Amiens	Amiens
Thérouanne	Thérouanne
-	Boulogne
	<u>Germania prima</u>
-	Mainz
Brumath	Strasbourg
Speyer	Speyer
Worms	Worms

	<u>Germania secunda</u>
Köln	Köln
Tongeren	Tongeren
	<u>Maxima Sequanorum</u>
Besancon	Besancon
Nyon	Nyon
Avenches	Avenches
Augst	Basel
	<u>Alpes Graiae et Poeninae</u>
Aime	Moutiers
Martigny	Martigny
	<u>Viennensis</u>
Vienne	Vienne
-	Genève
-	Grénoble
Aps	Aps
-	Die
Valence	Valence
St.-Paul	St.-Paul
Vaison	Vaison
Orange	Orange
Carpentras	-
Cavaillon	Cavaillon
Avignon	Avignon
Arles	Arles
Marseille	Marseille
Maritima	-
	<u>Aquitania prima</u>
Bourges	Bourges
Clermont-Ferrand	Clermont-Ferrand
Rodez	Rodez
-	Albi

Cahors
Limoges
Javols
St.-Paulien

Bordeaux
Agen
-
Saintes
Poitiers
Périgueux

-
Auch
Dax
-
St-Bertrand
-
-
-
-
-
-

Narbonne
Toulouse
Castel-Roussillon (Ruscino)
Béziers
Nîmes
Lodève

Cahors
Limoges
Javols
St.-Paulien

Aquitanica secunda

Bordeaux
Agen
Angoulême
Saintes
Poitiers
Périgueux

Novempopulan(i)a

Eauze
Auch
Dax
Lectoure
St-Bertrand
Arcachon (La Tête de Buch)
Pau
Aire
Bazas
Tarbes
Oloron
St.-Lizier

Narbonensis prima

Narbonne
Toulouse
-
Béziers
Nîmes
Lodève

Aix-en-Provence
Apt
Riez
Fréjus
-
-
Antibes

-
Digne
-
-
-
-
Cimiez
-

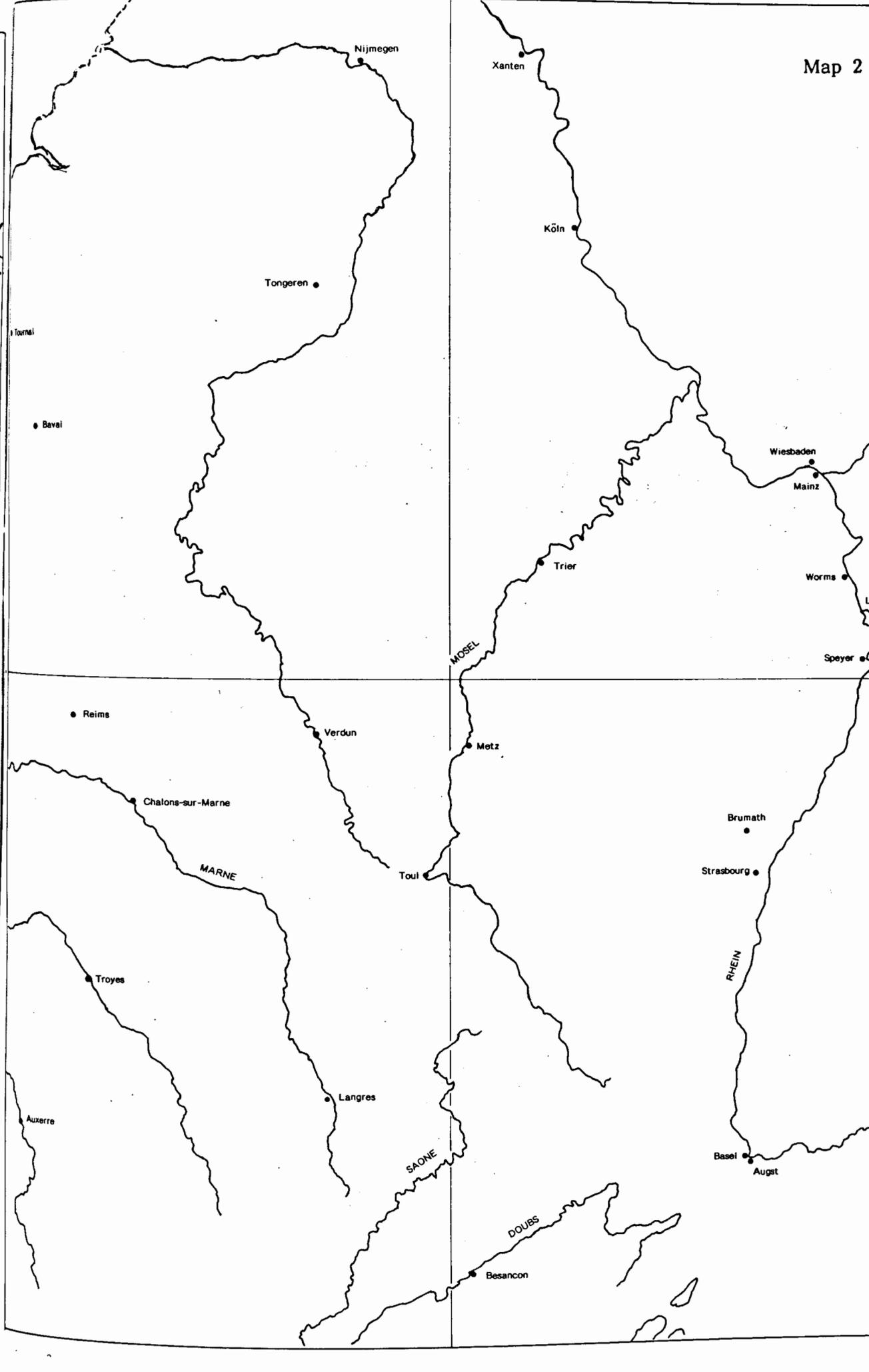
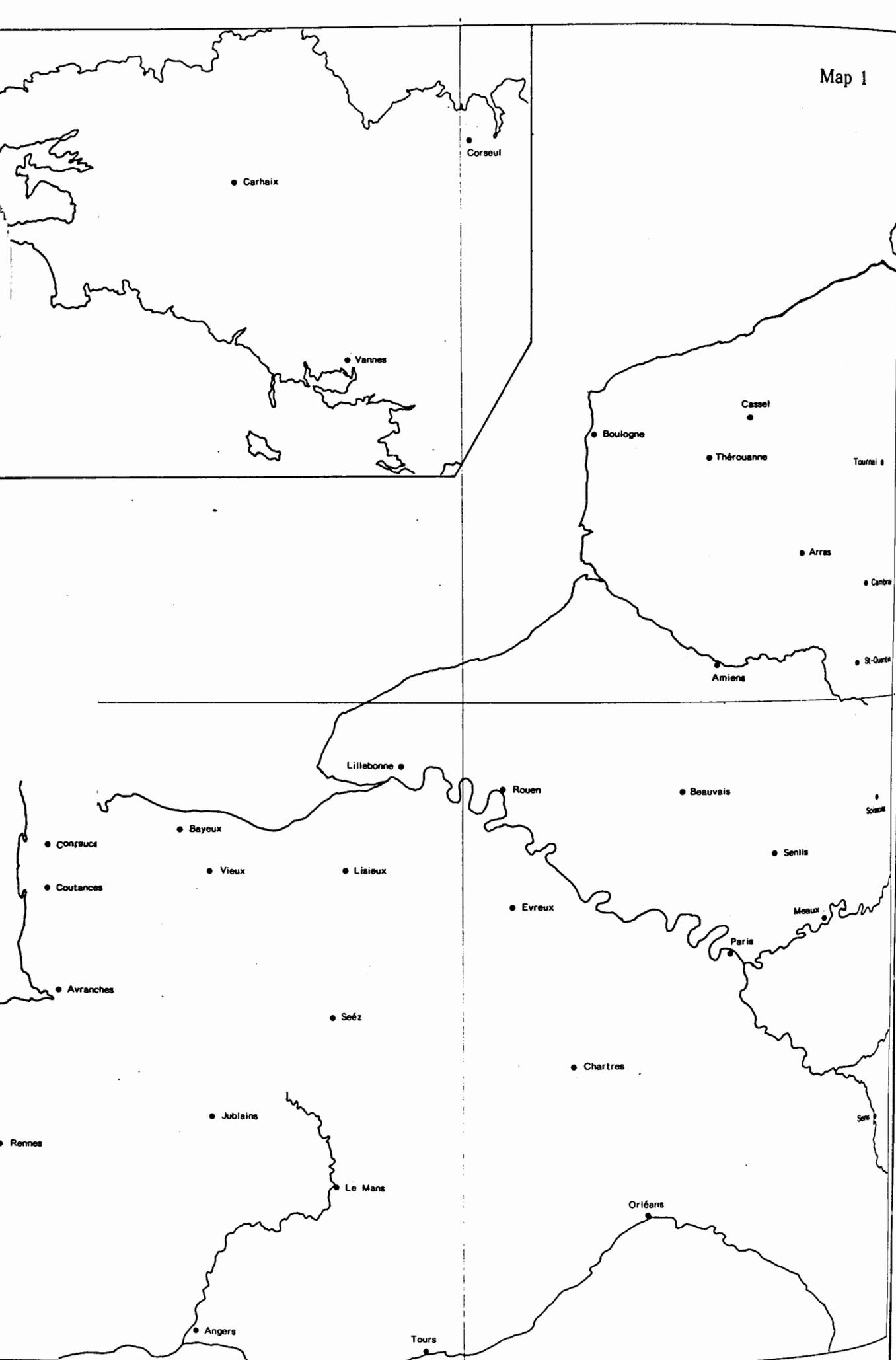
Narbonensis secunda

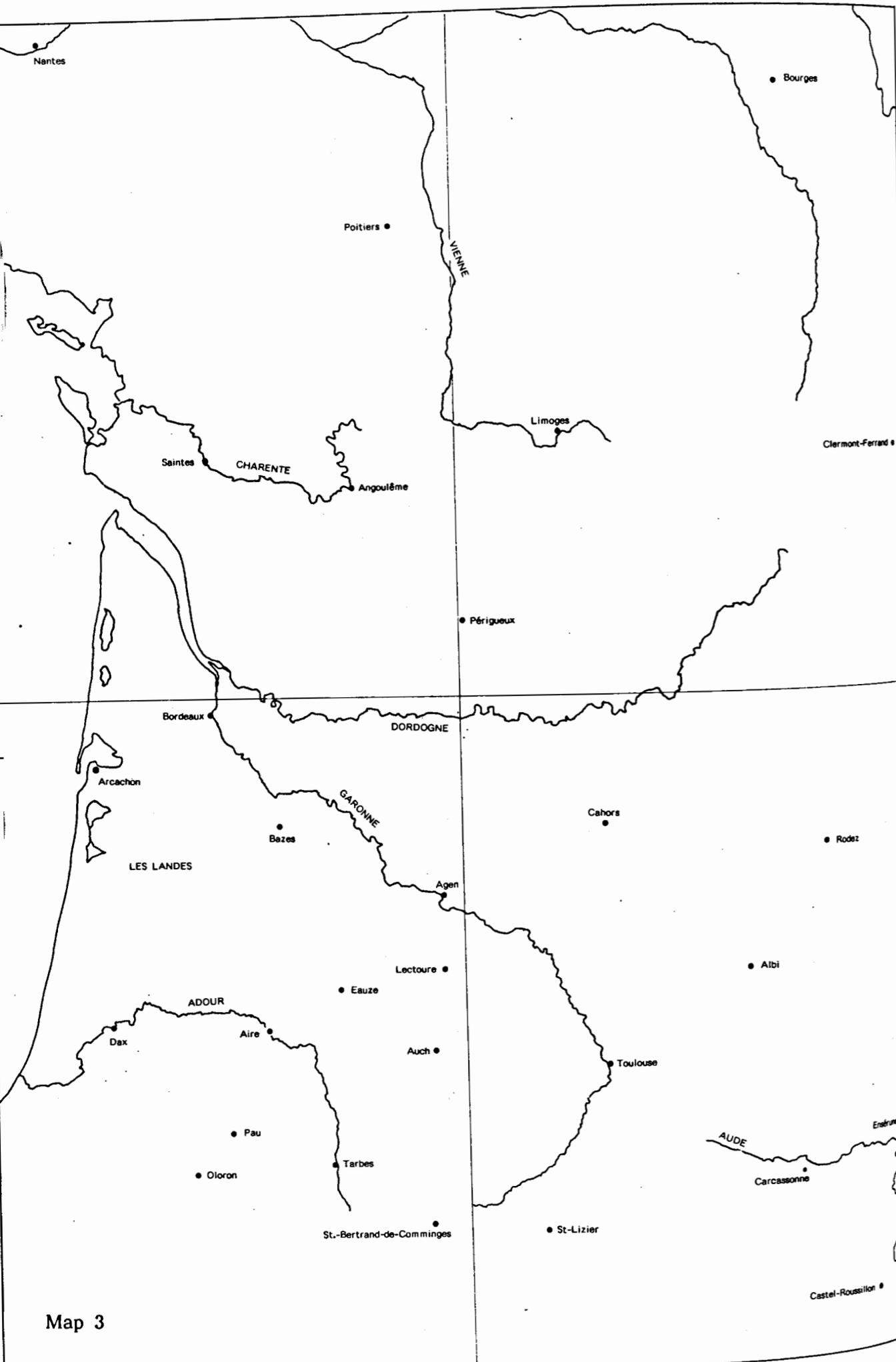
Aix-en-Provence
Apt
Riez
Fréjus
Gap
Sisteron
Antibes

Alpes maritimae

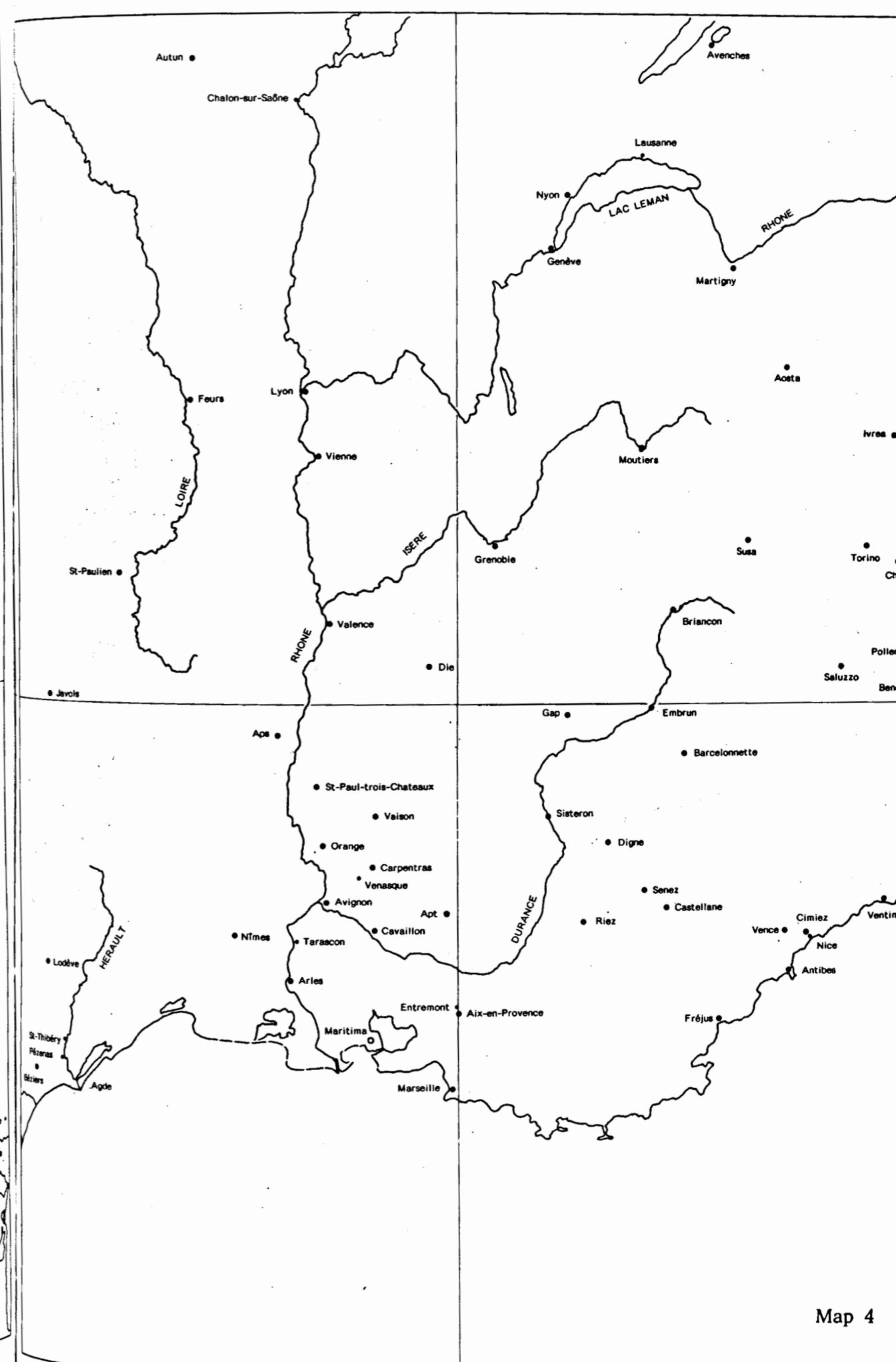
Embrun
Digne
Barcelonnette
Castellane
Senez
Glandève
Cimiez
Vence

MAPS

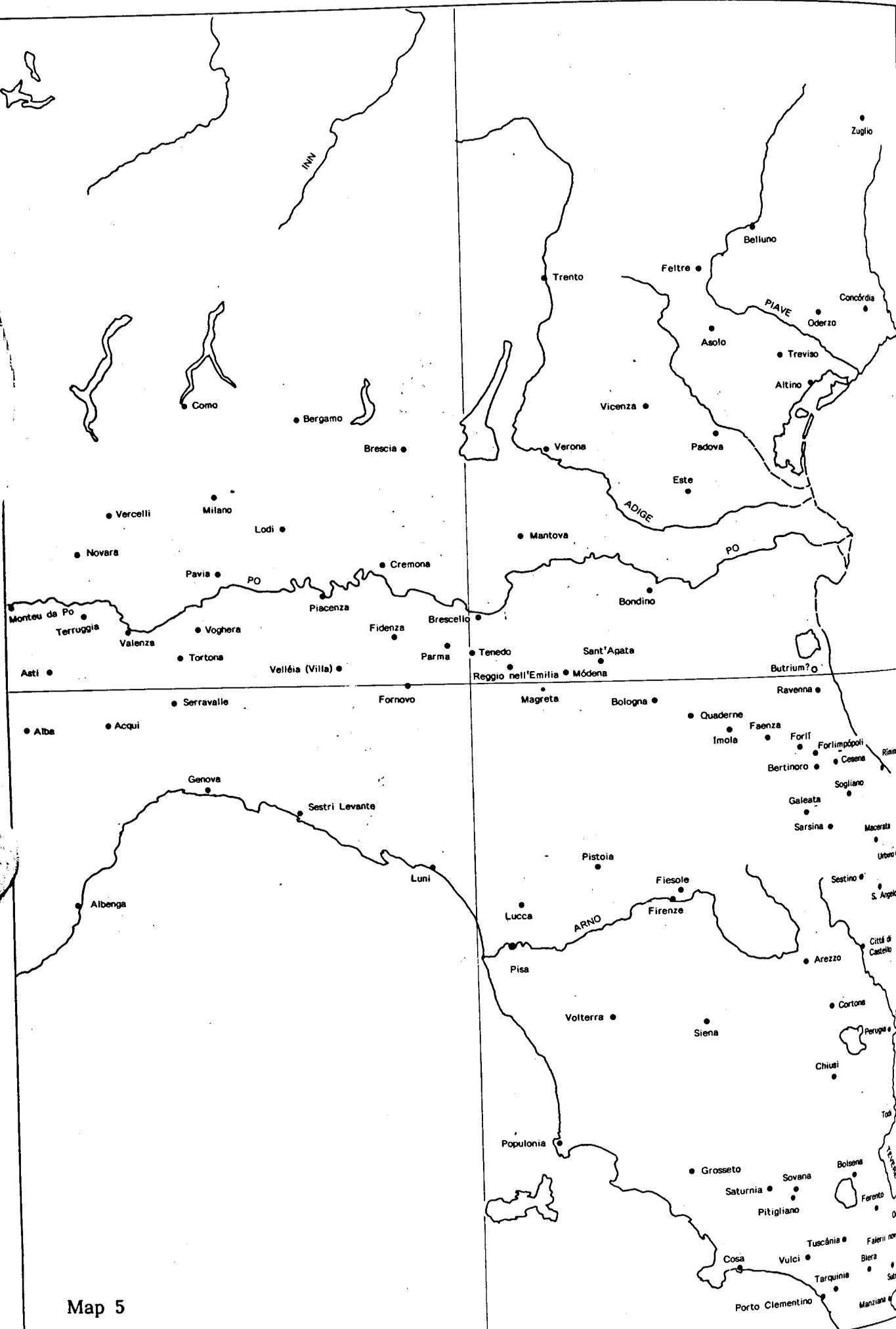




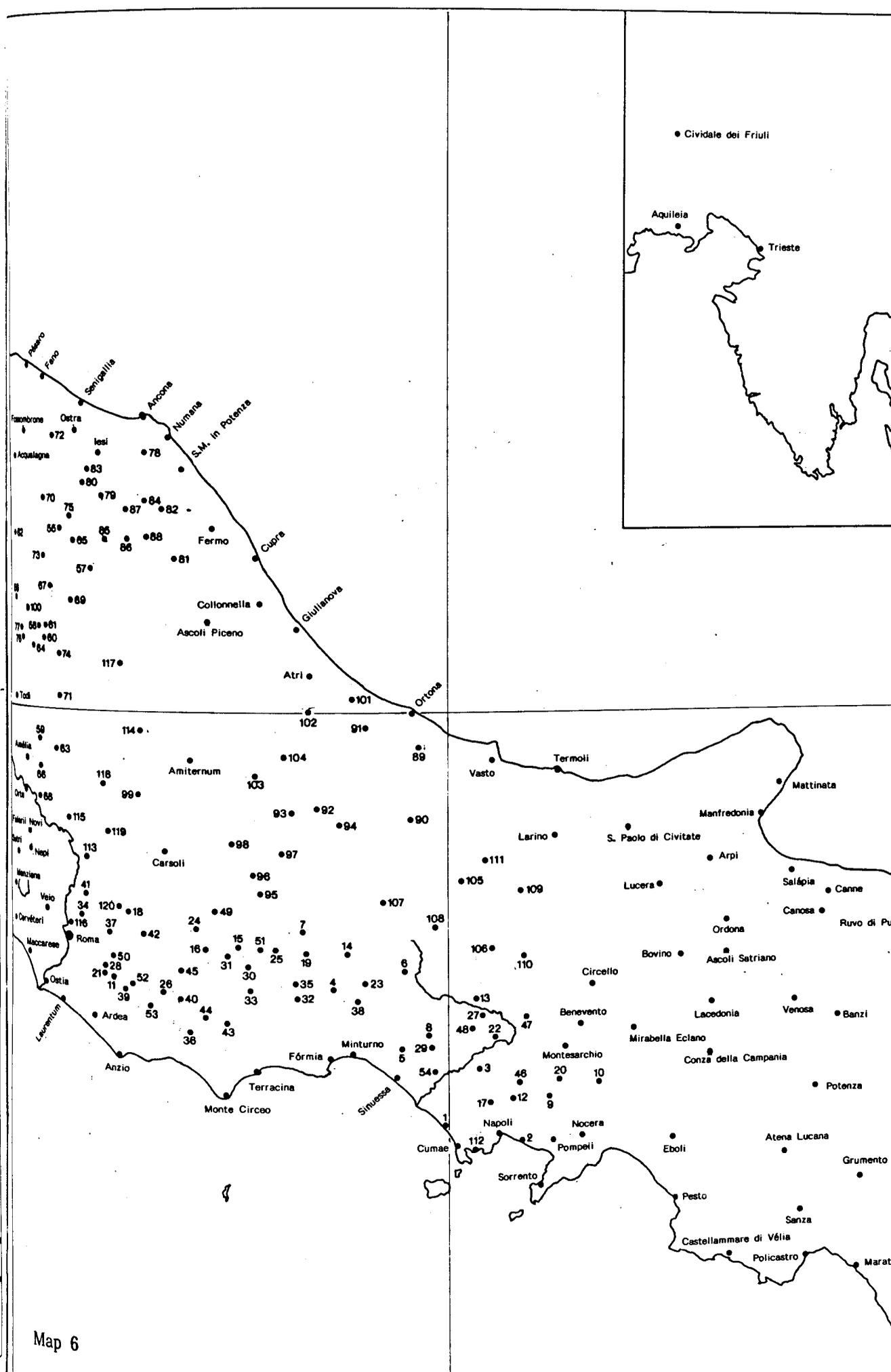
Map 3



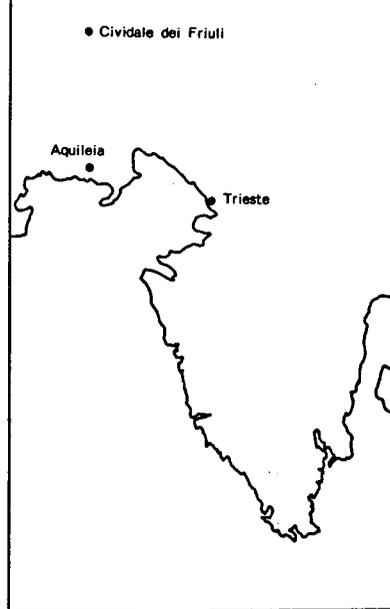
Map 4

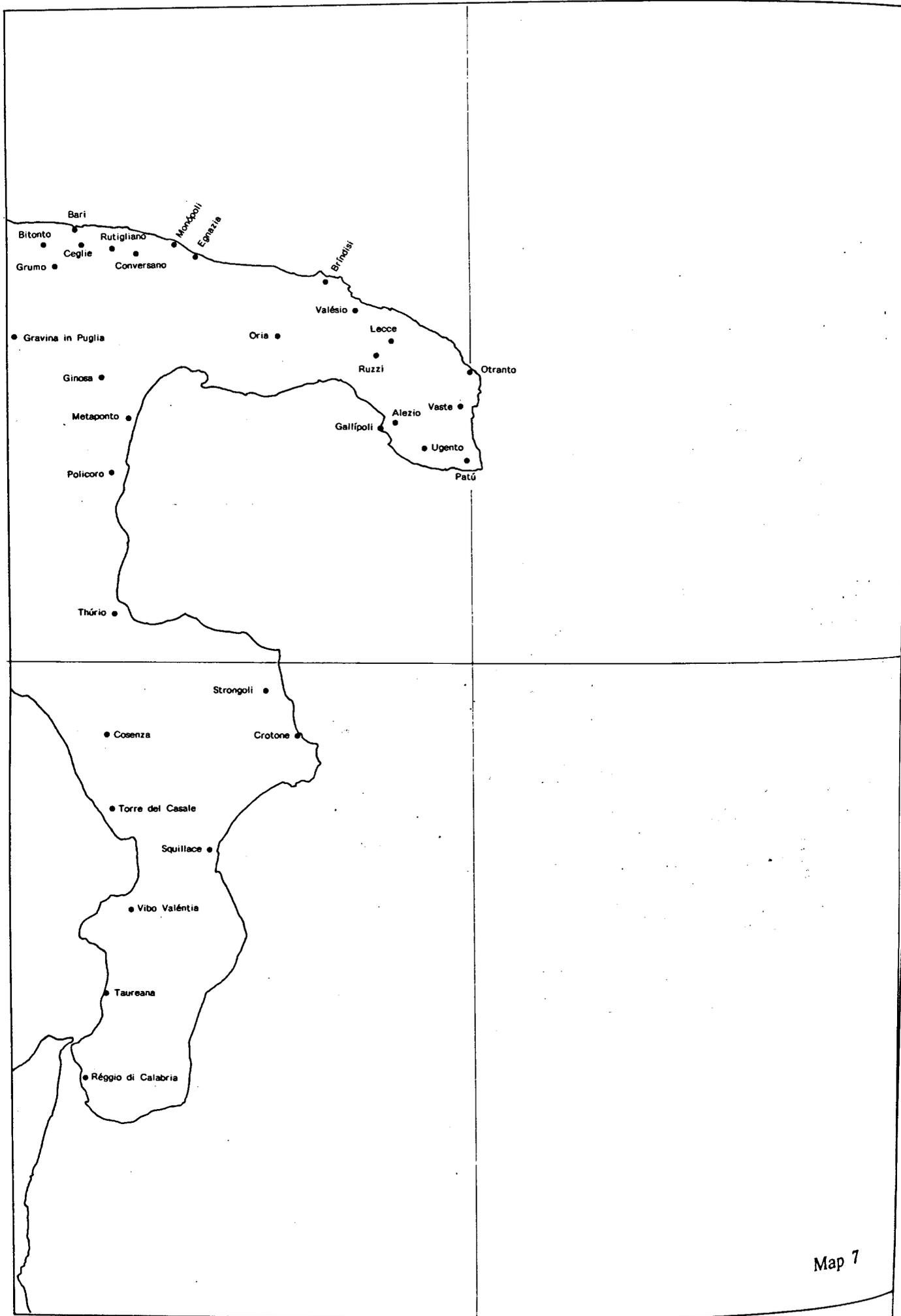


Map 5



Map 6





Map 7

Key to maps 5 and 6

- 1 Marina di Lago di Patria
- 2 Ercolano (Herculaneum)
- 3 S. Maria di Capua Vetere (Capua)
- 4 Aquino
- 5 Sessa Aurunca
- 6 Venafro
- 7 Sora
- 8 Teano
- 9 Nola
- 10 Avellino
- 11 Ariccia
- 12 Acerra
- 13 Alife
- 14 Atina
- 15 Alatri
- 16 Anagni
- 17 Orta di Atella
- 18 Castel S. Angelo
- 19 Arpino
- 20 Avella
- 21 Castelgandolfo
- 22 Caiazzo
- 23 Cassino
- 24 Piglio
- 25 Casamari
- 26 Cori
- 27 S. Ferdinando
- 28 Marino
- 29 Francolise
- 30 Frosinone
- 31 Ferentino
- 32 Falvaterra
- 33 Ceccano
- 34 S. Alessandro

35 Ceprano
36 Fáiiti
37 Gabii
38 Pignataro Interamna
39 Lanuvium
40 Norba
41 Mentana (Nomentum)
42 Palestrina
43 Priverno
44 Sezze
45 Segni
46 Canello
47 Telese
48 Treglia
49 Trevi nel Lázio
50 Frascati
51 Vérolí
52 Velletri
53 Cisterna
54 Borgo Appio
55 Attiglio
56 Civitella d'Arno
57 Camerino
58 Spello
59 S. Gémini Fonte
60 Foligno
61 S. Giovanni Profiamma
62 Gubbio
63 Terni
64 Bevagna
65 Matélica
66 Narni
67 Nocera
68 Otrícoli
69 S. Maria di Pistia
70 Sassoferrato

71 Spoleto
72 Castelleone di Suasa
73 Gualdo Tadino
74 Trevi
75 Borgo Tufico
76 Collemancio
77 Bettona
78 Osimo
79 Cíngoli
80 Cupramontana
81 Falerone
82 S. Claudio al Chienti
83 Monteroberto
84 Hélivia Ricina
85 S. Maria di Pieve
86 Tolentino
87 Tréia
88 Urbisaglia
89 Lanciano
90 Iuvanum
91 Chieti
92 Corfinio
93 Castelvecchio Subequo
94 Sulmona
95 Civita d'Antino
96 Luco dei Marsi
97 S. Benedetto dei Marsi
98 Albe (Alba Fucens)
99 Capradosso
100 Assisi
101 Spoltore
102 Penne
103 S. Paolo di Peluino
104 Ofina
105 Pietrabbondante
106 Boiano

- 107 Alfedena
- 108 Isérnia
- 109 Montágano
- 110 Altília
- 111 Trivento
- 112 Pozzuoli
- 113 Correse
- 114 Bacugno
- 115 S. Maria in Vescovio
- 116 Fidenae
- 117 Nórchia
- 118 Rieti
- 119 Monteleone Sabino
- 120 Tivoli

Index to maps

Sites are listed alphabetically by their modern names. The following information is given:

a. Ancient city-list:

- I-XI Italian regions I through XI (page 85 ff)
- A Aquitania (page 100)
- B Belgica and the Alpes Poeninae (page 101f)
- L Lugdunensis (page 100f)
- N Narbonensis et al. (page 99f)
- * Found only in the Notitia Galliarum (page 103ff)

b. Map number and sector. Each map is divided into four quarters, lettered as follows:

- A Upper left
- B Upper right
- C Lower left
- D Lower right

c. Site number on map 5 or 6 (if applicable).

Examples:

Cupramontana V 6 A 80

Cupramontana is found in the ancient city-list for region V, located in the upper left-hand quarter of map 6, and identified as site number 80.

Dax A 3 C

Dax is listed in the city-list for Aquitania and located in the lower left-hand quarter of map 3.

Die * 4 A

Die is listed in the Notitia Galliarum, but not in the first-century lists. It is located in the upper left-hand quarter of map 4.

Acerra	I	6 D	12
Acqualagna	VI	6 A	
Acqui	IX	5 C	
Agde		4 C	
Agen	*	3 C	
Aire-sur-l'Adour	*	3 C	
Aix-en-Provence	N	4 D	
Alatri	I	6 C	15
Alba	N	4 C	
Alba	IX	5 C	
Alba Fucens	IV	6 C	98
Albe	IV	6 C	98
Albenga	IX	5 C	
Albi	*	3 D	
Alezio	II	7 A	
Alfedena	IV	6 C	107
Alife	I	6 D	13
Altília	IV	6 D	110
Altino	X	5 B	
Amélia	VI	6 C	
Amiternum	IV	6 C	
Anagni	I	6 C	16
Ancona	V	6 A	
Angers	L	1 C	
Angoulême	*	3 A	
Antibes	N	4 D	
Anzio	I	6 C	
Aosta	XI	4 B	
Apt	N	4 C	
Aquiléia	X	6 B	
Aquino	I	6 C	4
Arcachon	*	3 C	
Ardea	I	6 C	
Arezzo	VII	5 D	
Ariccia	I	6 C	11

Arles	N	4 C	
Arpi	II	6 D	
Arpino	I	6 C	19
Arras	B	1 B	
Ascoli Piceno	V	6 A	
Ascoli Satriano	II	6 D	
Asolo	X	5 B	
Assisi	VI	6 A	100
Asti	IX	5 A	
Atena Lucana	III	6 D	
Atina	I	6 C	14
Atri	V	6 A	
Attiglio	VI	6 A	55
Auch	*	3 C	
Augst	B	2 D	
Autun	L	4 A	
Auxerre	*	2 C	
Avella	I	6 D	20
Avellino	I	6 D	10
Avenches	B	4 B	
Avignon	N	4 C	
Avranches	L	1 C	
Bacugno	IV	6 C	114
Banzi	III	6 D	
Barcellona	*	4 D	
Bari	II	7 A	
Basel	*	2 D	
Bavai	B	2 A	
Bayeux	L	1 C	
Bazas	*	3 C	
Beauvais	B	1 D	
Belluno	X	5 B	
Bene	XI	4 B	
Benevento	II	6 D	
Bergamo	XI	5 A	

Bertinoro	VIII	5 D	
Besancon	B	2 D	
Bettona	VI	6 A	77
Bevagna	VI	6 A	64
Béziers	N	4 C	
Bitonto	II	7 A	
Blera	VII	5 D	
Bojano	IV	6 D	106
Bologna	VIII	5 D	
Bolsena	VII	5 D	
Bondino	VIII	5 B	
Bordeaux	A	3 C	
Borgo Appio	I	6 C	54
Borgo Tufico	VI	6 A	75
Boulogne	*	1 B	
Bourges	A	3 B	
Bovino	II	6 D	
Brescia	X	5 A	
Briancon	*	4 B	
Brindisi	II	7 A	
Brumath	B	2 D	
Butrium	VIII	5 B	
Cahors	A	3 D	
Caiazzo	I	6 D	22
Cambrai	*	1 B	
Camerino	VI	6 A	57
Cancello	I	6 D	46
Canne	II	6 D	
Canosa	II	6 D	
Capradosso	IV	6 C	99
Capua	I	6 D	3
Carcassonne		3 D	
Carentan	L	1 C	
Carhaix	L	1 A	
Carpentras	N	4 C	
Carsoli	IV	6 C	

Casamari	I	6 C	25
Cassel	B	2 A	
Cassino	I	6 C	23
Castel-Roussillon	N	3 D	
Castel S. Angelo	I	6 C	18
Castelgandolfo	I	6 C	21
Castellammare di Stabia	III	6 D	
Castellane	*	4 D	
Castelleone di Suasa	VI	6 A	72
Castelvechio Subequo	IV	6 C	93
Cavaillon	N	4 C	
Ceccano	I	6 C	33
Ceglie	II	7 A	
Ceprano	I	6 C	35
Cerveteri	VII	6 C	
Cesena	VIII	5 D	
Chalon-sur-Saone		4 A	
Chalons-sur-Marne	*	2 C	
Chartres	L	1 D	
Chieri	XI	4 B	
Chieti	IV	6 C	91
Chiusi	VII	5 D	
Cimiez	N	4 D	
Cingoli	V	6 A	79
Circello	II	6 D	
Cisterna	I	6 C	53
Città di Castello	VI	5 D	
Cividale dei Friuli	X	6 B	
Civita d'Antino	IV	6 C	95
Civitella d'Arno	VI	5 D/6 A	56
Clermont-Ferrand	A	3 B	
Collemancio	VI	6 A	76
Collonnella	V	6 A	
Como	XI	5 A	
Concordia (Sagittaria)	X	5 B	
Conversano	II	7 A	

Conza della Campania	II	6 D	
Corfinio	IV	6 C	92
Cori	I	6 C	26
Correse	IV	6 C	113
Corseul	L	1 B	
Cortona	VII	5 D	
Cosa	VII	5 D	
Cosenza	III	7 C	
Coutances	*	1 C	
Cremona	XI	5 A	
Crotone	III	7 C	
Cumae	I	6 C/D	
Cupra	V	6 A	
Cupramontana	V	6 A	80
Dax	A	3 C	
Die	*	4 A	
Digne	N	4 D	
Eauze	*	3 C	
Eboli	III	6 D	
Egnázia	II	7 A	
Embrun	*	4 D	
Ensérune		3 D	
Entremont		4 C	
Este	X	5 B	
Ercolano	I	6 D	2
Evreux	L	1 D	
Faenza	VIII	5 D	
Fáiti	I	6 C	36
Falerii novi	VII	5 D/6 C	
Falerone	V	6 A	81
Falvaterra	I	6 C	32
Fano	VI	6 A	
Feltre	X	5 B	
Ferentino	I	6 C	31
Ferento	VII	5 D	
Fermo	V	6 A	
Feurs			

Feurs	L	4 A	
Fidenae	IV	6 C	116
Fidenza	VIII	5 A	
Fiesole	VII	5 D	
Firenze	VII	5 D	
Foligno	VI	6 A	60
Forlí	VIII	5 D	
Forlimpópoli	VIII	5 D	
Fórmia	I	6 C	
Fornovo	VIII	5 A/C	
Fossombrone	VI	6 A	
Francolise	I	6 C	29
Frascati	I	6 C	50
Fréjus	N	4 D	
Frosinone	I	6 C	30
Gabii	I	6 C	37
Galeata	VI	5 D	
Gallipoli	II	7 A	
Gap	*	4 D	
Genève	*	4 B	
Génova	IX	5 C	
Ginosa	II	7 A	
Giulianova	V	6 A	
Gravina in Puglia	II	7 A	
Grenoble	*	4 B	
Grosseto	VII	5 D	
Grumento	III	6 D	
Grumo Appula	II	7 A	
Gualdo Tadino	VI	6 A	73
Gubbio	VI	6 A	62
Hélvia Ricina	V	6 A	84
Herculaneum (Ercolano)	I	6 D	2
Iesi	VI	6 A	
Ímola	VIII	5 D	
Isérnia	IV	6 C	108
Iuvanum	IV	6 C	90

Ivrea	XI	4 B	
Javols	A	4 A	
Jublains	L	1 C	
Lacedonia	II	6 D	
Ladenburg		2 B	
Lanciano	IV	6 C	89
Langres	B	2 C	
Lanuvium	I	6 C	39
Larino	II	6 D	
Laurentum	I	6 C	
Lausanne		4 B	
Lecce	II	7 A	
Lectoure	*	3 C	
Lillebonne	*	1 C	
Limoges	A	3 B	
Lisieux	L	1 C	
Lodève	N	4 C	
Lodi	XI	5 A	
Lucca	VII	5 D	
Lucera	II	6 D	
Luco dei Marsi	IV	6 C	96
Luni	VII	5 C	
Lyon	L	4 A	
Macerata Feltria	VI	5 D	
Maccarese	I/VII	6 C	
Magreta		5 D	
Mainz	*	2 B	
Manfredonia	II	6 D	
Le Mans	L	1 C	
Mantova	X	5 B	
Manziana	VII	5 D/6 C	
Maratea	III	6 D	
Marina di Lago di Patria	I	6 C/D	1
Marino	I	6 C	28
Maritima	N	4 C	
Marseille	N	4 C	

Martigny	B	4 B	
Martigues > Maritima	N	4 C	
Matélica	VI	6 A	65
Mattinata	II	6 D	
Meaux	L	1 D	
Mentana	I/IV	6 C	41
Metaponto	III	7 A	
Metz	B	2 D	
Milano	XI	5 C	
Minturno	I	6 C	
Mirabella Eclano	II	6 D	
Módena	VIII	5 B	
Monópoli	II	7 A	
Montágano	IV	6 D	109
Monte Circeo	I	6 C	
Monteleone Sabino	IV	6 C	119
Monteroberto	V	6 A	83
Montesarchio	II	6 D	
Monteu da Po	IX	5 A	
Moutiers	N	4 B	
Nantes	L	3 A	
Napoli	I	6 D	
Narbonne	N	3 D	
Narni	VI	6 C	66
Nepi	VII	6 C	
Nice		4 D	
Nijmegen		2 A	
Nîmes	N	4 C	
Nocera	I	6 D	
Nocera	VI	6 A	67
Nocera	VI	6 A	9
Nola	I	6 D	
Nórcia	IV	6 A	117
Norma	I	6 C	40
Novara	XI	5 A	
Numana	V	6 A	

Nyon	B	4 B	
Oderzo	X	5 B	
Ofina	IV	6 C	104
Oloron	*	3 C	
Orange	N	4 C	
Ordona	II	6 D	
Oria	II	7 A	
Orléans	*	1 D	
Orta di Atella	I	6 D	17
Orte	VII	5 D/6 C	
Ortona	IV	6 A/C	
Osimo	V	6 A	78
Ostia	I	6 C	
Ostra	VI	6 A	
Otranto	II	7 A/B	
Otricoli	VI	6 C	68
Padova	X	5 B	
Palestrina	I	6 C	42
Paris	L	1 D	
Parma	VIII	5 A	
Patú	II	7 A/B	
Pau	*	3 C	
Pavia	XI	5 A	
Penne	IV	6 A/C	102
Périgueux	A	3 B	
Perugia	VII	5 D	
Pésaro	VI	6 A	
Pesto	III	6 D	
Pézenas		4 C	
Piacenza	VIII	5 A	
Piane di Falerone	V	6 A	81
Pietrabbondante	IV	6 D	105
Piglio	I	6 C	24
Pignataro Interamna	I	6 C	38
Pistoia	VII	5 D	
Pitigliano	VII	5 D	

Poitiers	A	3 A	
Policastro	III	6 D	
Policoro	III	7 A	
Pollenza	XI	4 B	
Pompeii	I	6 D	
Populonia	VII	5 D	
Porto Clementino	VII	5 D	
Potenza	III	6 D	
Pozzuoli	I	6 D	112
Priverno	I	6 C	43
Quaderne	VIII	5 D	
Ravenna	VIII	5 D	
Réggio di Calabria	III	7 C	
Reims	B	2 C	
Rennes	L	1 C	
Rieti	IV	6 C	118
Riez	N	4 D	
Rimini	VIII	5 D	
Rodez	A	3 D	
Roma	I	6 C	
Rouen	L	1 D	
Ruscino > Castel-Roussillon	N	3 D	
Rutigliano	II	7 A	
Ruvo di Puglia	II	6 D	
Ruzzi	II	7 A	
Salápia	II	6 D	
Saluzzo	XI	4 B	
S. Agata	VIII	5 B	
S. Alessandro	I	6 C	34
S. Angelo	VI	5 D	
S. Benedetto dei Marsi	IV	6 C	
S. Claudio al Chienti	V	6 A	82
S. Ferdinando	I	6 D	27
S. Gémini Fonte	VI	6 C	59
S. Giovanni Profiamma	VI	6 A	61
S. Maria Capua Vetere	VI	6 A	3

S. Maria di Pieve	V	6 A	85
S. Maria di Pistia	VI	6 A	69
S. Maria in Potenza	V	6 A	
S. Maria in Vescovio	IV	6 C	115
S. Paolo di Civitate	II	6 D	
S. Paolo di Peluino	IV	6 C	103
St.-Bertrand-de-Comminges	A	3 C	
St.-Lizier	*	3 D	
St.-Paul-trois-Châteaux	N	4 C	
St.-Paulien	A	4 A	
St.-Quentin	B	1 B	
St.-Thibéry		4 C	
Saintes	A	3 A	
Sanza	III	6 D	
Sarsina	VI	5 D	
Sassoferrato	VI	6 A	70
Satúrnia	VII	5 D	
Sééz	*	1 C	
Segni	I	6 C	45
Senez	*	4 D	
Senigallia	VI	6 A	
Senlis	B	1 D	
Sens	L	1 D	
Serravalle	IX	5 C	
Sessa Aurunca	I	6 C	5
Sestino	VI	5 D	
Sestri Levante	IX	5 C	
Sezze	I	6 C	44
Siena	VII	5 D	
Sinuessa	I	6 C	
Sisteron	*	4 D	
Sogliano	VIII	5 D	
Soissons	B	1 D	
Sora	I	6 C	7
Sorrento	I	6 D	

Sovana	VII	5 D	
Spello	VI	6 A	58
Speyer	B	2 B	
Spoletto	VI	6 A	71
Spoltore	IV	6 A	101
Squillace	III	7 C	
Strasbourg	*	2 D	
Strongoli	III	7 C	
Sulmona	IV	6 C	94
Susa	XI	4 B	
Sutri	VII	5 D/6 C	
Tarascon		4 C	
Tarbes	*	3 C	
Tarquinia	VII	5 D	
Taureana	III	7 C	
Teano	I	6 C	8
Telese	I	6 D	47
Tenedo	VIII	5 B	
Termoli	IV	6 D	
Terni	VI	6 C	63
Terracina	I	6 C	
Terruggia	IX	5 A	
La Tête de Buch > Arcachon	*	3 C	
Thérouanne	B	1 B	
Thúrio	III	7 A	
Tivoli	IV	6 C	120
Todi	VI	5 D	
Tongeren	B	2 A	
Tolentino	V	6 A	86
Torino	XI	4 B	
Torre del Casale	III	7 C	
Tortona	IX	5 A	
Toulouse	N	3 D	
Tournai	*	1 B/2 A	
Tours	L	1 C	
Treglia	I	6 D	48

Tréia	V	6 A	87
Trento	X	5 B	
Trevi	VI	6 A	74
Trevi nel Lázio	I	6 C	49
Treviso	X	5 B	
Trier	B	2 B	
Trieste	X	6 B	
Trivento	IV	6 D	111
Troyes	B	2 C	
Tuscânia	VII	5 D	
Ugento	II	7 A	
Urbino	VI	5 D	
Urbisaglia	V	6 A	88
Vaison	N	4 C	
Valence	N	4 A	
Valenza	IX	5 A	
Valésio	II	7 A	
Vannes	L	1 A	
Vaste	II	7 A/B	
Vasto	IV	6 D	
Veio	VII	6 C	
Velléia	VIII	5 A	
Velletri	I	6 C	52
Venafro	I	6 C	6
Venasque		4 C	
Vence	N	4 D	
Venosa	II	6 D	
Ventimiglia	IX	4 D	
Vercelli	XI	5 A	
Verdun	*	2 C	
Vérolí	I	6 C	51
Verona	X	5 B	
Vibo Valéntia	III	7 C	
Vicenza	X	5 B	
Vienne	N	4 A	

Vieux	L	1 C
Voghera	IX	5 A
Volterra	VII	5 D
Wiesbaden		2 B
Worms	B	2 B
Xanten		2 B
Zuglio	X	5 B