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POPULATION CHANGES IN THE AUVERGNE REGION OF CENTRAL FRANCE, 1954–1968

With 7 fig. and 5 tables

HUGH CLOUT

Zusammenfassung: Bevölkerungsbewegungen in der Auvergne, Mittelfrankreich, zwischen 1954 und 1968

Dieser Beitrag wendet zwei Arten der Typologisierung auf die komplizierten Bevölkerungsbewegungen in der Auvergne an, die während der Zwischenvolkszählungsperiode 1954–62 und 1962–68 verzeichnet wurden. In 46 von 52 städtischen Einheiten nahm die Bevölkerung zwischen 1954 und 1968 zu, wobei Clermont-Ferrand und die umliegenden Städte den bedeutendsten Zuwachs sowohl durch Zuwanderung als auch natürliche Vermehrung zeigten. Auf dem Lande nahm die Bevölkerung um 8% ab. Diese Zahl gilt jedoch keineswegs allgemein. So muß ein großer Teil des Auvergne-Oberlandes, in dem eine übermäßig erhöhte Sterbe- über die Geburtenrate zusammenwirkt mit der Abwanderung, als demographisches Katastrophengebiet ausgewiesen werden. Im Gegensatz dazu erfuhr Cantal einen Bevölkerungsrückgang, bei dem die Abwanderung die ebenfalls rückläufige Geburtenrate weit übertrifft. Die Limagnes schließlich erwies sich, wenn auch in wechselndem Maße, als demographisch gesund. Die Komplexität dieser jüngsten Trends wurde bei der Klassifizierung der Bedingungen in den 1326 Gemeinden der Auvergne sichtbar. Die Suburbanisierung in der Limagnes nahm zwar in den 60er Jahren zu; doch verschlechterten sich die Bedingungen im Katastrophengebiet und im Hinblick auf das fehlende Reservoir. Nur wenige Städte des Oberlandes entwickelten sich zu Stützpunkten, die künftig dem ländlichen Hinterland Dienstleistungen garantieren könnten.

The Massif Central forms the most extensive rural problem area in France, being characterized by isolation from major centres of economic growth, a range of poor physical environments when compared with surrounding areas, and varying degrees of economic decline (JOLY and ESTIENNE, 1973). In the past the region displayed high rates of natural increase and functioned as an important 'reservoir' of labour for

the cities and lowland regions of France. Long-established systems of seasonal and temporary outmigration carried workers to many parts of France and, indeed, to other countries of Western Europe (FEL, 1962). Gradually these movements hardened into permanent outmigration, particularly following the construction of the railway network after the middle years of the nineteenth century (MERLIN, 1971; PRITIE, 1971). Now, as a result of centuries of outmigration, the Massif displays a weakened demographic structure, contains some of the lowest population densities in France, and presents some of the most challenging problems that face rural planners in any part of the country. Creation of the *Société pour la Mise en Valeur de l'Auvergne-Limousin* (S.O.M.I.V.A.L.) in 1962 and designation of large areas of the Massif as *zones de rénovation rurale* in 1967 reflect regional and national recognition of the need for rural management at a variety of scales. The complete structural framework of rural life needs reorganization in order to deal with present and likely future man/land relationships which are very different from what they were at various stages in the past during which traditions of land use, and patterns of land ownership, roads, settlement, and village administration evolved.

Local conditions confronting regional and rural planners vary enormously, with differing trends of population change being not the least of these. It is the purpose of this paper to examine such changes for the intercensal periods of 1954–62 and 1962–68 in the planning region of the Auvergne. This comprises the *départements* of Allier, Cantal, Haute-Loire and Puy-de-Dôme in the central-northern section of the Massif Central and covers a range of physico-geographical

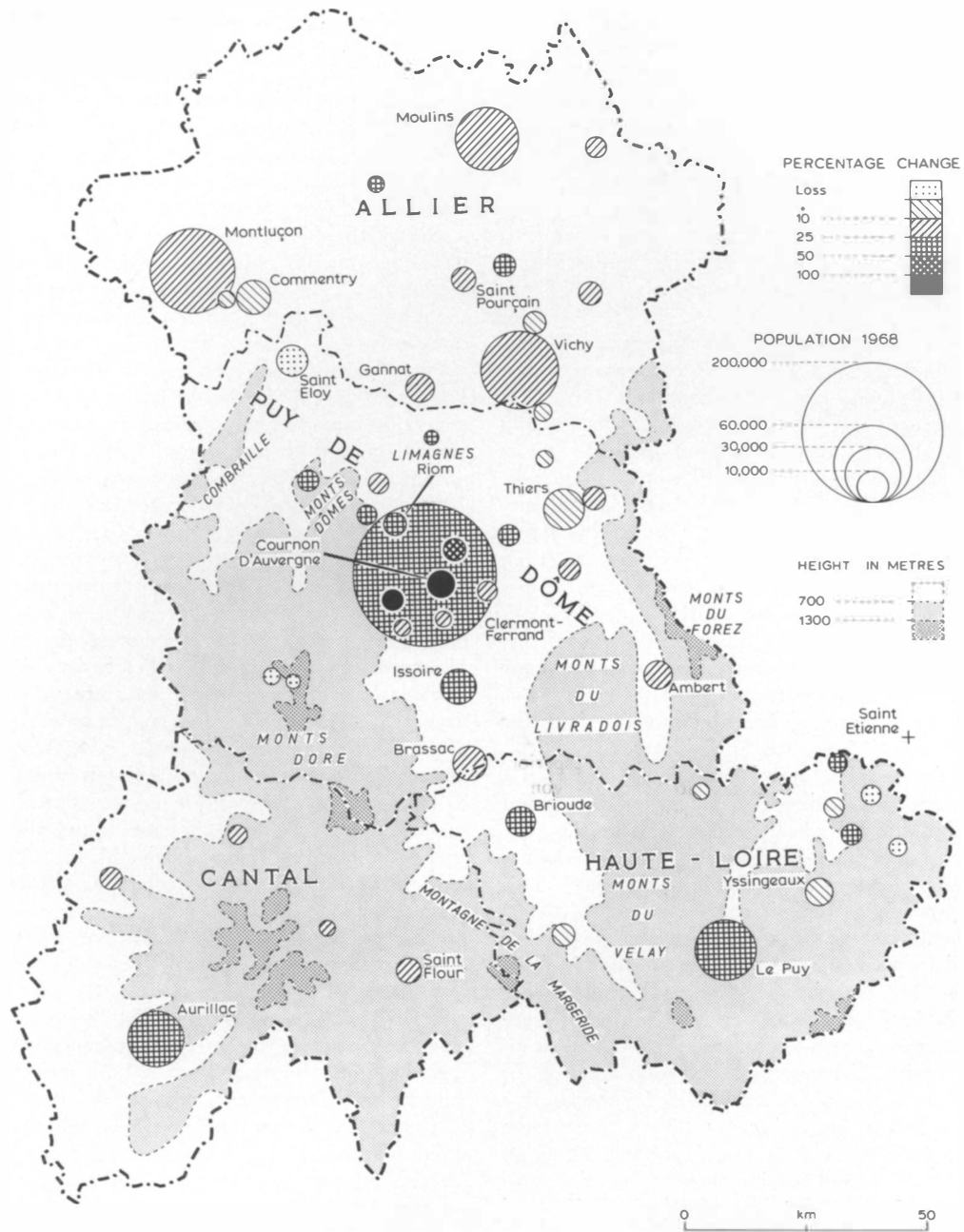


Fig. 1: Population of urban units in the Auvergne and percentage change 1954–68 (Only urban units with more than 5,000 residents in 1968 are named.)

sub-regions, from the outwash plains of Allier, and the rich soils of the Limagnes trough, to the middle-mountain areas of Combraille, Livradois and Velay, and the high volcanic territory of Cantal (Fig. 1).

Results of the most recent census in 1968 showed that the Auvergne contained fewer residents than at the beginning of the nineteenth century. This unwelcome distinction was shared with only four of the twenty-one other French planning regions (Basse-Nor-

mandie, Bourgogne, Limousin, and Midi-Pyrénées). Admittedly, by comparing figures for 1968 with those for 1806, the decline appeared to be slight, with the Auvergnat population falling from 1,322,000 to 1,305,100 (*population municipale*), but nevertheless this was diametrically opposed to the national trend, since the population of France as a whole grew by 71 per cent from 29.10 millions to 49.85 millions. In fact, such an impression of stagnation in the Auvergne is

illusory, because total numbers increased regularly until the middle years of the nineteenth century and then continued to rise unevenly to reach 1,557,350 in 1886. Thereafter the number of Auvergnats declined, as a result of outmigration and falling rates of natural increase, to reach a regional minimum of 1,215,700 in 1954. Since then there has been a regional reversal of the seventy-year trend of population loss. Although impressive in an Auvergnat context, the 7 per cent increase between 1954 and 1968 was modest when compared with the national growth rate (+ 16.8 per cent).

The employment pattern of the Auvergne still contains an important agricultural component, with 139,000 people being engaged in farming in 1968. This figure represents less than one-third of the 490,500 recorded in the agricultural census of 1862. As late as 1921 450,000 Auvergnats were still working the land. However since World War II the number of agricultural workers in the region has fallen by three-fifths, with there being 217,500 fewer in 1968 than in 1946. In spite of the volume of these changes, 26 per cent of Auvergnat workers were still engaged in farming in 1968. Only eight planning regions in southern and western France had higher proportions of labour on the land. Cantal *département*, with 44 per cent of its workforce in farming, had almost three times the national average (15 per cent) of primary workers.

Contraction of the farm labour force forms only one component of the broader decline of population living in rural areas. The official French definition of a rural *commune* is one with fewer than 2,000 inhabitants living in its central nucleation (*chef-lieu*). This definition was first applied in 1831 when 1,230,650 rural Auvergnats were recorded. Since then the number has halved to reach a rural *population municipale* of 639,300 in 1968 and the share of rural residents has fallen from 87 per cent to 48 per cent. But only 30 per cent of the national population was classified as 'rural' at the last census. Urbanization of certain areas of the Auvergne has been rapid after 1954, with the number of town dwellers increasing by 27 per cent from 531,838 to 675,787 in 1968 and involving 52 *unités urbaines* which ranged in size from a few thousand apiece to 202,306 in the case of Clermont-Ferrand (Fig. 1). But not until the 1960s were there more town dwellers than rural residents in the region. The Auvergne lagged behind the national rate of urbaniza-

tion, as that stage had been reached four decades earlier for the whole of France. With almost one half of its population living in rural *communes* the Auvergne is the sixth most 'rural' of the twenty-two French planning regions. Its average population density is only 51/km², little more than half of the national average (94/km²). Lower average densities were recorded in only four other regions.

Recent trends of population change in the Auvergne have been examined closely by Professor PIERRE ESTIENNE (1956-69). The region benefitted from something of a demographic renaissance in the immediate post-war years, with rates of natural increase being inflated temporarily as in other parts of France. However, since 1950 the Auvergne has experienced a general reduction in natural increase. Even the Cantal, which functioned traditionally as a sort of demographic 'reservoir', contained few areas in the middle 1960s where natural growth rates attained the national average. A reduction in mean annual rates of natural increase from 1954-62 to 1962-68 was recorded for almost all sections of the region except urban units in Haute-Loire and Puy-de-Dôme. During the 1960s the highest rates of natural increase were registered in the Limagnes around Clermont-Ferrand, even though birth rates in this area had been among the lowest in France during the 1930s. In ESTIENNE's words, "a sort of demographic inversion" (1966, p. 171) was operating to the detriment of the highlands and the benefit of the Limagnes, where new industries and associated construction activities attracted short-distance migrants from higher parts of the Massif Central and long-distance migrants from other parts of France and from abroad.

Between 1962 and 1968 the Auvergne received 22,305 more migrants than it dispatched, with a net loss of 11,490 to other regions of France but a net gain of 33,795 from abroad. The latter category included a large contingent of Portuguese workers and their families who moved to the Limagnes. While each Auvergnat *département* received a net inflow of foreigners, the largest number moved to Puy-de-Dôme, which was the sole *département* to register a net inflow of population from other parts of the region and from other regions of France (Table 1).

It is not the intention of this essay to examine such trends in detail. Instead, elucidation of recent population change and the spatial patterns that resulted will

Table 1: Net migratory balance, 1962-68

	Allier	Cantal	Haute-Loire	Puy-de-Dôme	Auvergne
To/from Abroad	+ 8,890	+ 1,410	+ 2,350	+ 21,145	+ 33,795
Other French regions	- 2,715	- 5,785	- 4,655	+ 1,665	- 11,490
Other Auvergnat <i>départements</i>	- 2,125	- 2,645	- 1,210	+ 5,980	

Source: Institut National de la Statistique et des Etudes Economiques, *Région Auvergne: Perspectives de Population et d'Emploi pour le VI^{ème} Plan* (Clermont-Ferrand, 1970), 6-7.

be attempted by the application of two kinds of typology. The first of these involves compiling Cartesian Coordinate graphs and mapping the resultant 'types' of population change that can be identified in a manner similar to that devised by JOHN WEBB (1963) in his study of the natural and migrational components of population changes in England and Wales between 1921 and 1931. It is a simple matter to plot data along the horizontal and vertical axes of Cartesian Coordinate graphs thus indicating the relative importance either of two sets of information (such as natural change and net migration) for one intercensal period, or of one range of data for two periods. Eight 'types' of population are thus derived from each graph. These are exemplified in Figure 2a, which shows mean annual rates of population change for urban units in the Auvergne by indicating rates for 1954-62 along the horizontal axis and those for 1962-68 along the vertical axis. This method has the advantage of being simple yet rigorous. The second range of typologies involves variants on those devised by PIERRE DUBOSQ (1972) in his study of rural mobility in Aquitaine, and will be examined later in the discussion.

Urban population changes, 1954-68

The municipal population of the 52 officially-defined urban units of the Auvergne increased by 143,949 (+ 27 per cent) from 531,838 to 675,787 during this period. All except six urban units shared in this growth, but in varying degrees. The largest numerical increase was recorded in Clermont-Ferrand where the municipal population grew by 45 per cent from 139,445 to 202,306 (Fig. 1). Roughly comparable rates of growth were registered in other towns surrounding this city, including Issoire (+ 44 per cent) and Pont-du-Château (+ 52 per cent), but in these cases the absolute number of additional urban residents was relatively small, being no more than a few thousand apiece. Fastest rates of growth involved suburbanizing settlements on the margins of Clermont-Ferrand, such as Cournon-d'Auvergne, rising from

2,687 to 6,967 (+ 159 per cent), and Romagnat, increasing from 1,659 to 4,273 (+ 158 per cent). Other towns in the Limagnes, a few industrial settlements near Saint-Etienne, and the sub-regional centre of Aurillac also grew at above-average rates. However, over one half of the total increase in urban dwellers in the region was accounted for by the city of Clermont-Ferrand and the four surrounding settlements of Cournon-d'Auvergne, Pont-du-Château, Riom and Romagnat, together containing 75,280 more residents in 1968 than in 1954.

All but nine of the 52 urban units experienced population growth between 1954 and 1962 and between 1962 and 1968, with annual rates of increase being faster after 1962 than during the first period in 31 towns (Type I), and in one third of this total annual growth between 1962 and 1968 was at least twice as rapid as in the preceding inter-censal period (Table 2, Figs. 2a and 2b). Only in 12 towns did rates of increase slow down during the 1960s (Type II). These included mining and industrial settlements, such as Brassac, Montluçon, Saint-Georges-de-Mons and Thiers. Annual rates of growth in excess of 2.0 per cent affected seven towns in three suburbanizing locations: the city of Clermont-Ferrand and its periphery (Pont-du-Château, Romagnat, Cournon-d'Auvergne); elsewhere in the southern Limagnes (Brioude, Issoire); and in proximity to Saint-Etienne (Aurec-sur-Loire). Only nine towns underwent the remaining six types of population change. Four of these experienced loss in both periods (Types V and VI) and included the declining coal-mining settlement of Saint-Eloy-des-Mines. A similar number of towns changed from loss to gain (Types VII and VIII), and included the thermal centres of La Bourboule and Le Mont Dore. Only one settlement changed from growth to loss (Type III). This was the town of Noyant-d'Allier which had expanded as a reception centre for repatriates from Indo-China in the 1950s but thereafter failed to maintain its growth.

Unlike parts of the Auvergnat countryside, 43 towns in the region experienced natural increase during both

Table 2: Types of population change in Auvergnat urban units and rural cantons (number of cases)

Type	Urban units			Rural cantons			
	Total change 1954-68	Natural change 1954-68	Migratory change 1954-68	Total change 1954-68	Natural change 1954-68	Migratory change 1954-68	Natural and migratory change 1962-68
I	31	22	26	7	14	7	2
II	12	21	12	6	32	4	11
III	1	1	2	1	12	2	5
IV	0	2	0	3	13	4	1
V	2	3	5	61	50	51	13
VI	2	1	1	45	5	52	48
VII	2	2	4	4	4	6	37
VIII	2	0	2	3	0	4	3

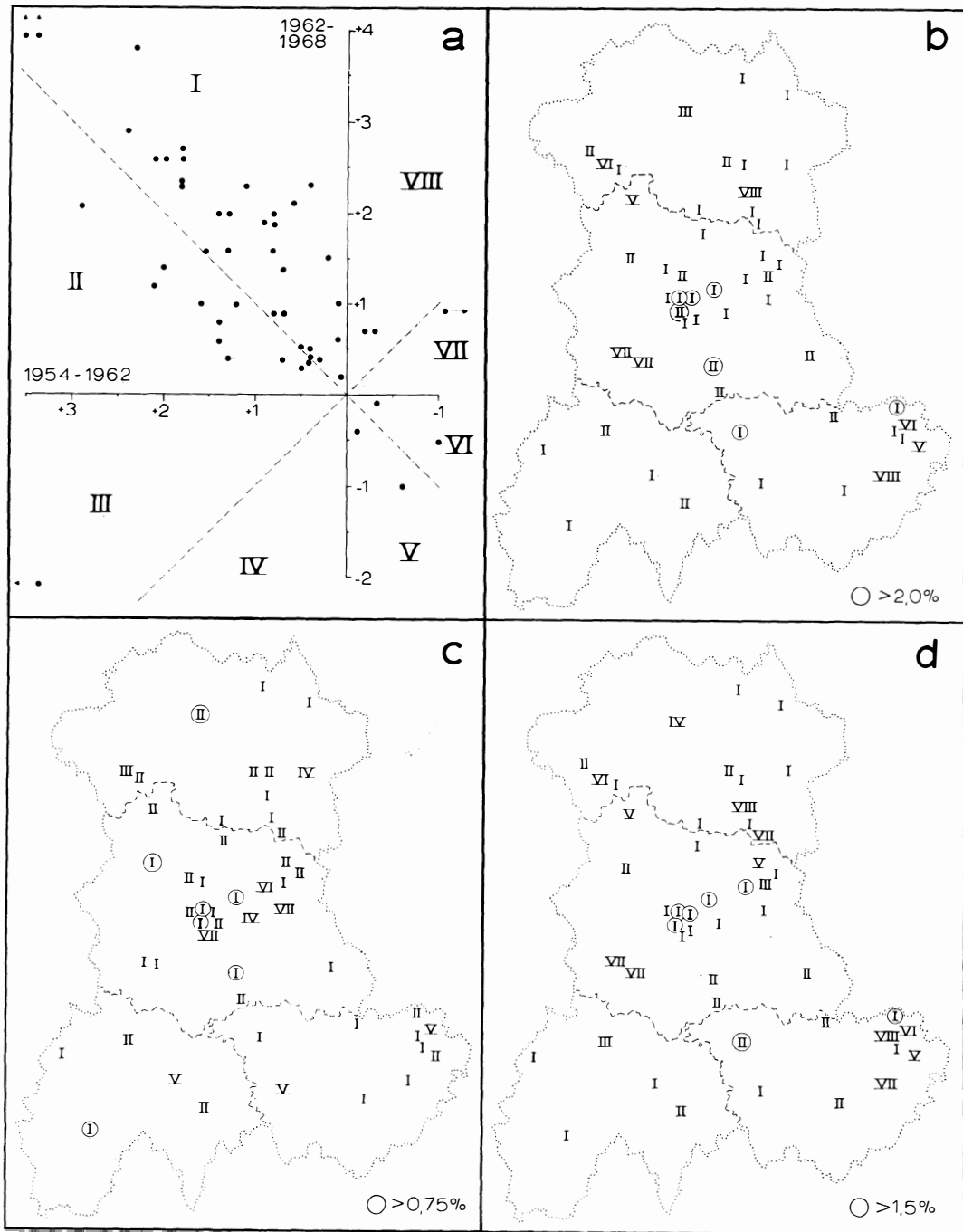


Fig. 2: (a) Cartesian Coordinate graph showing types of total population change for Auvergnat urban units 1954-68
 (b) Types of total population change for urban units 1954-68
 (c) Types of natural change for urban units 1954-68
 (d) Types of migratory change for urban units 1954-68

inter-censal periods (Table 2), with an almost equal number undergoing faster annual rates of growth in the second period (Type I) than in the first (Type II). The highest rates of natural growth (more than 0.75

per cent per annum) involved not only towns in the Limagnes and the exceptional case of Noyant-d'Allier, but also Aurillac and Saint-Georges-de-Mons, both of which are located in upland regions of traditionally

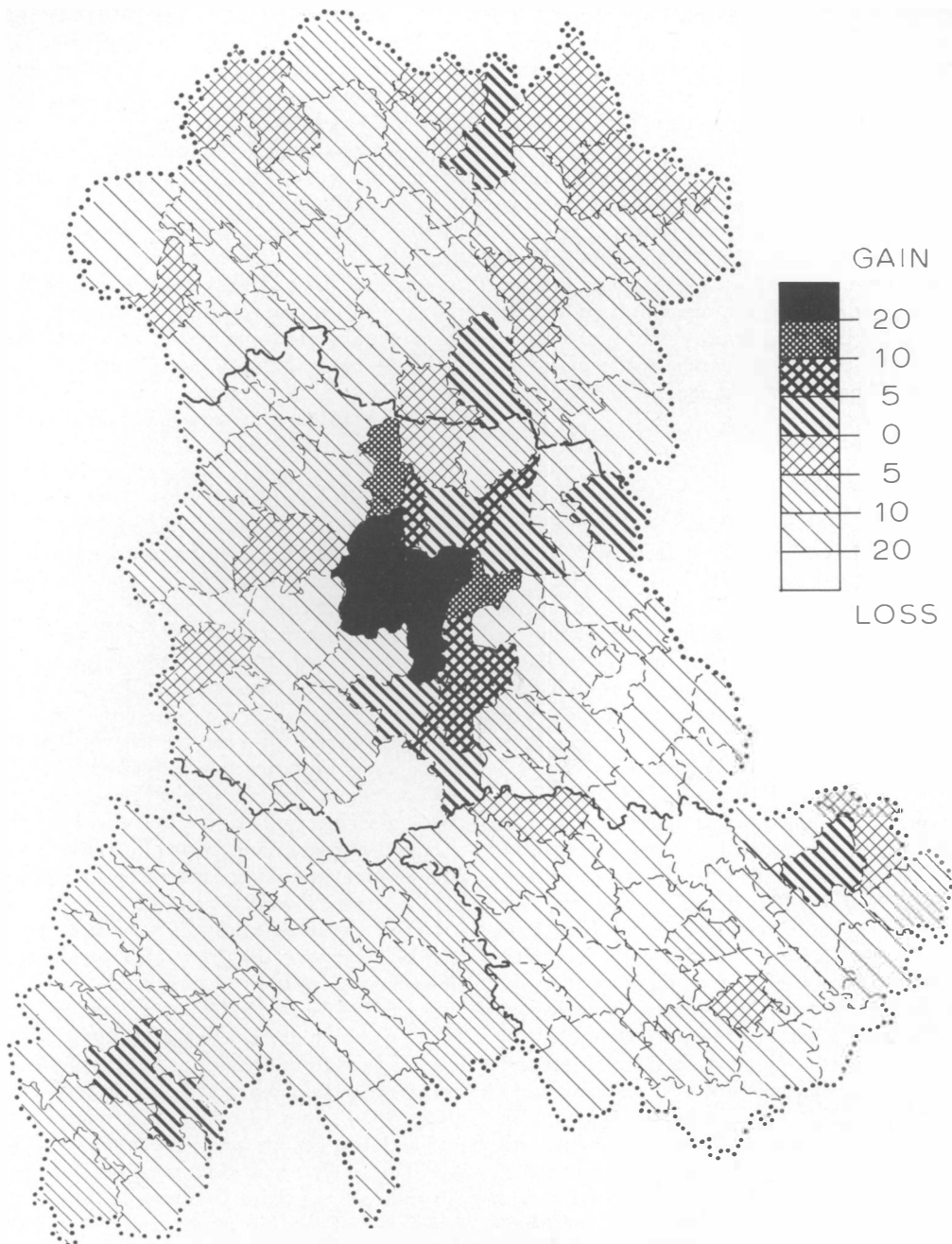


Fig. 3: Population change in rural cantons 1954–68

high natural increase (Fig. 2c). Deaths were more numerous than births between 1954 and 1968 in only four towns (Types V and VI). Finally, two settlements on the margins of the urbanizing zone of Clermont-Ferrand changed from natural loss in the 1950s to natural gain in the following decade (Type VII).

A roughly similar pattern was produced when the results of migration to urban units were plotted (Fig. 2d). Thirty-eight towns experienced net in-migra-

tion throughout the period 1954–68 and in the majority of these (26) migratory growth was more after 1962 (Type I). Urban units in the Limagnes lowland registered the highest rates of annual in-migration, with gains in excess of 1.5 per cent per annum affecting seven Limagnais settlements, of which five formed part of the broader urbanized zone of Clermont-Ferrand. Six towns switched from migratory loss to gain (Types VII and VIII) and included the thermal centres of La

Bourboule and Le Mont Dore, but only the old industrial town of Thiers and the small upland centre of Riom-ès-Montagnes underwent the reverse process (Type III). Out-migration exceeded in-migration in the remaining six towns throughout the period (Types V and VI).

The overall trend of population change among urban units in the Auvergne between 1954 and 1968 was clearly positive, and the rise of the metropolitan area around Clermont-Ferrand, with high rates of in-migration and natural increase, was the most striking aspect. In all other parts of the region, urban growth was dispersed and involved small numbers of people. By contrast with this general consistency of urban growth, trends of population change in the Auvergnat countryside varied considerably.

Rural population changes, 1954–68

The municipal population of 'rural' *cantons* in the Auvergne declined by 8 per cent from 683,901 to 629,300 between 1954 and 1968, but the pattern of change was far from uniform. The important process of 'suburbanization', that has been depicted among urban units in the Limagnes, also spread into villages in 18 officially-defined 'rural' *cantons* in Puy-de-Dôme *département* and to four more *cantons* near the towns of Aurillac, Moulins, and Vichy, and in the urban shadow of Saint-Etienne (Fig. 3). But rates of rural increase between 1954 and 1968 were slight in these latter *cantons*, nowhere exceeding 5 per cent and in two cases being little more than 1 per cent. By contrast, growth exceeded 50 per cent in the two rural *cantons* of Riom and were above 40 per cent in two of the four rural *cantons* centred on Clermont-Ferrand. In general terms, rates of rural growth declined with increasing distance from the core of the regional metropolis. Population declined in remaining parts of the region, upland and lowland alike.

Thirteen rural *cantons* in Puy-de-Dôme increased their number of inhabitants between 1954 and 1968 (Types I and II), with areas in close proximity to Clermont-Ferrand accelerating annual rates of growth after 1962 (Type I) as new houses and apartments were constructed, and old agricultural properties were converted into dwellings for commuters and their families (Table 2, Fig. 4a). In addition, four country *cantons* to the east of Clermont-Ferrand increased their population after 1962, having registered losses in the 1950s (Types VII and VIII). Changes of this kind were few and far between elsewhere in the Auvergne, but did occur in the hinterlands of Aurillac and Saint-Etienne.

The Auvergnat countryside displayed varying degrees of decline beyond the core of growth in rural areas of the Limagnes. A total of 106 of the 130 rural *cantons* lost population in both parts of the period in question (Types V and VI) and in 61 of these the mean

rate of loss accelerated in the 1960s (Type V). After 1962 the ranks of the declining areas were augmented by a further four *cantons* which had managed to sustain some growth in the preceding eight years (Types III and IV).

By contrast with the relatively straightforward pattern of total change, variations in natural change in the Auvergnat countryside were spatially complicated between 1954 and 1968 (Fig. 4b). Births exceeded deaths not only in the stretches of suburbanizing countryside that have already been identified, but also in the remnants of the traditional 'reservoir' of labour in the mountainous Cantal and in sections of the southern highland rim of Haute-Loire (Types I and II). However, a large number of rural *cantons* in the Limagnes and around urban centres in Allier experienced reduced rates of natural increase after 1962 (Type II). There was, in fact, a marked contraction in the 'declining reservoir' of population, as 25 *cantons* changed from natural increase to natural decrease after 1962 (Types III and IV). Core areas of natural growth in Cantal, southern Haute-Loire, Allier and sections of the Limagnes were eroded substantially. Conversely, rates of natural increase continued to rise during the 1960s in country areas around Clermont-Ferrand and near a few other urban centres (Type I).

Deaths exceeded births between 1954 and 1968 in the remaining 55 rural *cantons* (Types V and VI). This 'demographic disaster zone' stretched from the severely-depopulated uplands of the Forez and Livradois to the Combrailles and also included lowland areas in the northern Limagnes and parts of Allier. After 1962 its dimensions were enlarged by one half with the addition of 25 *cantons* (Types III and IV).

Unlike the complexities of natural change, the pattern of migratory change was simple (Fig. 4c). Only eleven rural *cantons* experienced net in-migration between 1954 and 1968 (Types I and II), with rates of in-migration accelerating after 1962 in seven areas immediately around Clermont-Ferrand. A further ten *cantons* changed from migratory loss to migratory gain after 1962 (Types VII and VIII). These were located in the Limagnes, around the subregional centres of Aurillac, Le Puy and Montluçon, and the isolated industrial focus of Saint-Georges-de-Mons/Ancizes. The remainder of the Auvergnat countryside experienced net rural exodus, with the 103 *cantons* that declined throughout the 1954–68 period being joined by six more after 1962 (Types III and IV).

Finally, information on natural and migratory change has been synthesized for the second part of the study period to allow three demographic sub-regions to be identified in the Auvergne for 1962–68 (Fig. 4d).

The largest of these was the 'demographic disaster zone' which extended in a southeast/northwest direction from the mountain fringe of Haute-Loire, through the uplands of Puy-de-Dôme, to the western lowlands of Allier, with two outliers in Cantal. Rates of net

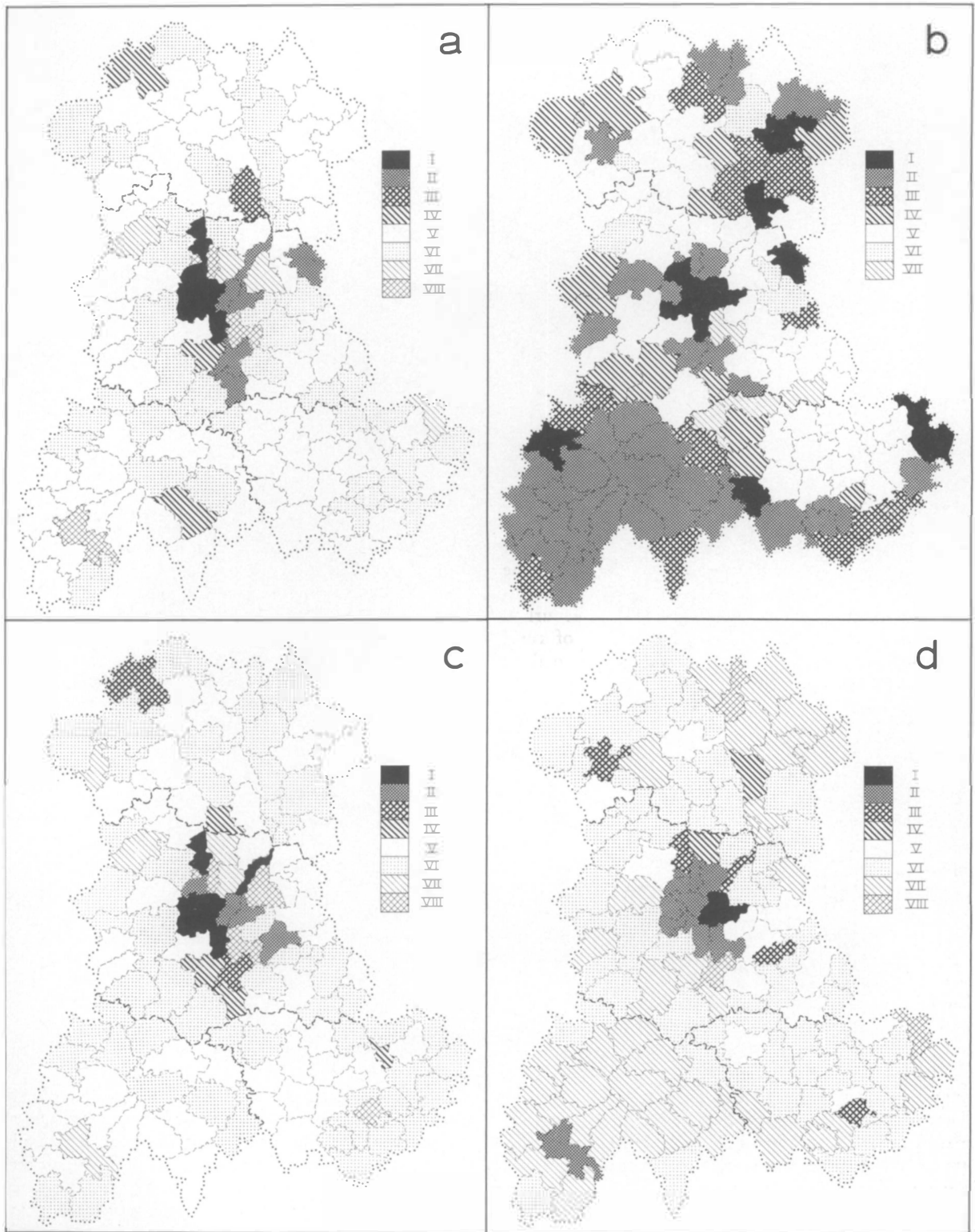


Fig. 4: Types of population change for rural cantons 1954–68
(a) Total change (c) Migratory change
(b) Natural change (d) Natural and migratory changes 1962–68

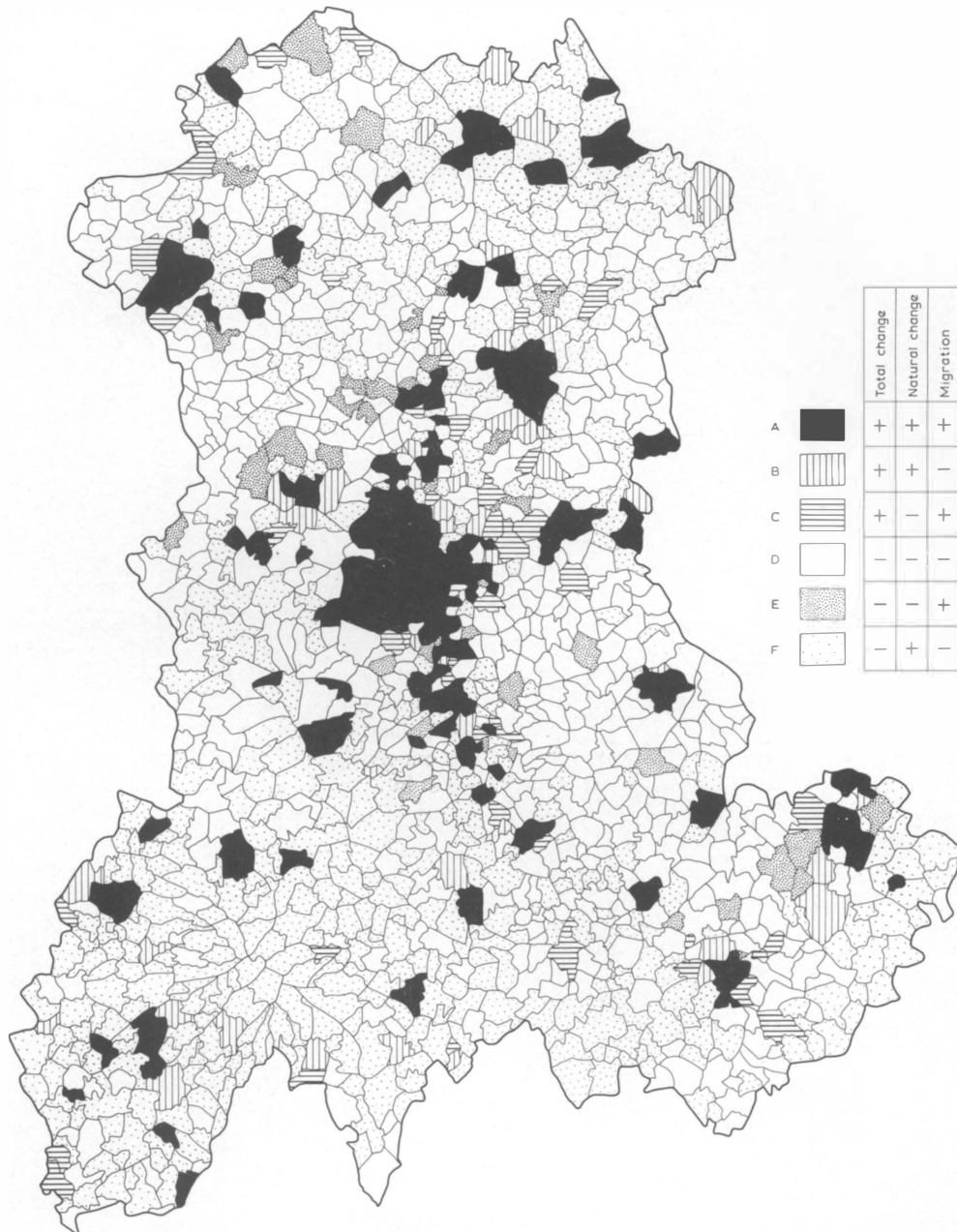


Fig. 5: Sixfold typology of population change by commune 1964–68

migratory loss were greater than rates of natural decrease in 48 *cantons* (Type VI), but in 13 *cantons*, mainly in Livradois and Velay, the reverse relationship applied (Type V) and excess of deaths over births was the key process provoking population decline.

The second sub-region was the 'declining reservoir' of Cantal, sections of Haute-Loire, eastern Allier, and a few parts of Puy-de-Dôme. Rates of net out-migration were greater than natural increase in 37 cases (Type VII).

Finally, the demographically healthy zone involved 22 *cantons*, but that 'health' varied in quality. Only two *cantons* to the east of Clermont-Ferrand registered higher rates of natural increase than net in-migration (Type I), but for the majority of growing *cantons* around the city the reverse relationship held true (Type II). Two isolated examples of this type of growth occurred to the north of Vichy and near Aurillac. In six *cantons* close to Clermont-Ferrand, Le Puy and Montluçon, net in-migration more than

counter-balanced natural loss (Types III and IV), with three scattered examples experiencing growth simply as a result of natural increase outweighing out-migration (Type VIII).

Detailed population changes, 1954–68

While offering the advantage of reducing the volume of data to be handled, the preceding typology had the disadvantages of generalizing conditions that might vary substantially within *cantons*, and enforcing a distinction between 'rural' and 'urban' areas that might scarcely conform to reality, as, for example, in suburbanizing areas of the Limagnes. These disadvantages may be overcome by applying a second typology that is almost identical to that devised for Aquitaine by P. DUBOSCQ (1972). The direction, rather than the volume, of total, natural and migratory change between 1954 and 1968 has been classified for each of the 1,326 *communes* in the Auvergne to produce a six-fold typology. Thus, for example, natural increase and net in-migration combine to produce population increase (Type A), whereas net out-migration in excess of natural increase produces population loss (Type F). Four other types of change may be identified, to generate a realistic but spatially complicated picture (Fig. 5).

Only 261 Auvergnat *communes*, one-fifth of the total, increased their population between 1954 and 1968 (Types A, B and C), of which one half (130) were located in Puy-de-Dôme, particularly in low-lying country to the north, east and south of Clermont-Ferrand (Table 3). By contrast, relatively few settlements on the steeply-rising ground to the west of the city increased their population. Growth points were dispersed through other sections of the remaining *départements* but in many cases were separated by broad stretches of depopulation territory.

Demographically healthy settlements, experiencing net in-migration and natural increase (Type A), were particularly numerous around the regional capital, and accounted for 18.4 per cent of the *communes* in Puy-de-Dôme, as opposed to 11.8 per cent for the whole region (Table 3). Urban employment attracted large numbers of migrants in this latest phase of downward movement from highland parts of the Auvergne. Many of these recent migrants were young married couples who started or enlarged their families in their new

homes and thus inflated Limagnais rates of natural increase. *Communes* of this type were found on a smaller scale elsewhere in the region, but were markedly under-represented in the mountainous *départements* of Cantal and Haute-Loire (Table 3).

Natural increase more than compensated for net out-migration in only 52 *communes* (Type B). Some of these represented remnants of the declining demographic 'reservoir' of the Cantal and other upland areas, where numbers still managed to be replaced in spite of long-established and powerful out-migration. Other examples were found in transitional areas around employment centres, where rates of natural growth were inflated but in-migrant families were less settled than in Type A *communes* and net out-migration resulted.

An equally small number of *communes* grew only as a result of net in-migration which more than counterbalanced natural decrease (Type C). Such settlements comprised small market centres, as well as newly-suburbanized *communes* on the margins of Type A settlements, for example to the east of Clermont-Ferrand, and around Le Puy and Montluçon.

The remaining 1,065 *communes*, representing four-fifths of the total, formed a vast zone of population loss, covering upland and lowland areas. Taking the Auvergne as a whole, natural decrease interacted with net out-migration in 512 *communes* (Type D). These were located in an almost uninterrupted band of territory from the southern limit of Haute-Loire running northwards to the eastern parts of Allier. Small areas were also found on the plateau of Combrailles and in lowland sections of Allier. Many Type D *communes* were located in the most isolated and consistently depopulated parts of the region, far from flourishing employment centres. Others were in upland locations surprisingly close to Clermont-Ferrand and Vichy and represented remnants of the pre-suburban demographic situation which had typified much of the severely-depopulated Limagnes before commuting began to gather pace after World War II (BRESSOLETTE, 1966).

Natural increase was more than out-weighted by net out-migration (Type F) in an almost equal number of *communes* (508). This kind of change characterized the declining demographic 'reservoir' of the southern uplands of the Auvergne and involved 69.4 per cent of the *communes* in Cantal, compared with 38.3 per cent for the whole region. Natural decrease exceeded net

Table 3: Types of population change in the Auvergne by commune, 1954–68

Types	A	B	C	D	E	F	Total
Allier	35 10.9%	13 4.0%	14 4.4%	114 35.5%	17 5.3%	128 39.9%	321
Cantal	16 5.9%	10 3.7%	6 2.2%	50 18.7%	0 0.0%	186 69.4%	268
Haute-Loire	19 7.1%	7 2.7%	11 4.2%	123 46.6%	7 2.7%	97 36.7%	264
Puy-de-Dôme	87 18.4%	22 4.7%	21 4.4%	225 47.6%	21 4.4%	97 20.5%	473
Auvergne	157 11.8%	52 3.9%	52 3.9%	512 38.6%	45 3.4%	508 38.3%	1,326

Table 4: Matrix of types of population change, 1954–62, 1962–68

		1962–68							
		A	B	C	D	E	F		% non-changes
1954–62	A	88	15	9	19	0	30	161	54.7
	B	18	13	4	14	1	29	79	16.5
	C	5	1	18	26	6	5	61	29.5
	D	8	3	40	290	50	57	448	64.7
	E	1	0	9	19	10	2	41	24.4
	F	38	22	15	205	14	242	536	45.1
		158	54	95	573	81	365	661	= non-changes

in-migration in the remaining 45 *communes* (Type E) that were widely scattered throughout the region.

Generation of this typology shows that four-fifths of the surface of the Auvergne was undergoing depopulation of one type or another between 1954 and 1968. The trend of change in *communes* in Allier *département* conformed closely to the Auvergnat average (Table 3). By contrast, Type F *communes* predominated in Cantal and Type D settlements were over-represented in Haute-Loire. Puy-de-Dôme displayed an important internal dichotomy, containing above-average proportions of both Type A and Type D settlements, in the Limagnes and Livradois respectively.

A more realistic impression of the interaction of the processes producing population change in the Auvergne may be derived by disaggregating information for 1954–62 and 1962–68, devising typologies for both intercensal periods, and comparing their structure. A condition of apparent stability emerges, with the number of *communes* undergoing growth (Types A, B, and C) increasing from 301 to 307. But tabulation of actual changes, rather than intercensal totals, shows this summary impression is illusory. Half of the *communes* in the Auvergne (661) occupied the same population category between 1962 and 1968 as they had done in the preceding eight years (Table 4). The number of *communes* growing through an interaction of natural increase and net in-migration (Type A) or simply through natural increase (Type B) was reduced by 28 cases. By contrast, Type C *communes*, which relied entirely on in-migration for growth, increased by 34. But the most striking changes involved an increase of 125 Type D *communes* to form an enlarged demographic disaster area, a doubling in the number of Type E *communes*, and the contraction of the declining demographic 'reservoir' (Type F) by 172 *communes*.

The possible variety of change in population 'types' between 1954–62 and 1962–68 is considerable. In theory, *communes* of each of the six initial types (A–F)

might be transformed into any one of the other five types, thus giving a range of thirty transformations. After critical consideration of the cases involved, the thirty possible transformations have been amalgamated for purposes of simplicity into nine (i–ix) which are indicated on Table 5, along with source types of population change (1954–62), end product types (1962–68), and the number of *communes* involved in each transformation. Figure 6 shows the distribution of each of the nine transformations and lists demographic characteristics of the end product types. *Communes* that remained in the same type in each intercensal period are left unshaded.

Table 5: Typology of population transformation by commune, 1962–68; compared with 1954–62

Transformation	End product typ, 1962–68	Source types, 1954–62	Number of communes
i	A	B, C	23
ii	A	D, E, F	47
iii	B	A, C, D, E, F	41
iv	C	A, B, D, E, F	77
v	D	E, F	224
vi	D	A, B, C	59
vii	F	A, B, C	64
viii	F	D, E	59
ix	E	A, B, C, D, F	71

In 23 *communes* population growth had been produced between 1954 and 1962 by either natural increase or by net in-migration, but in the following six years both processes interacted in a positive direction to strengthen population increase (Type i). Transformations of this kind occurred mainly in areas of suburban growth in the Limagnes and around Aurillac and Thiers.

A complete reversal from population decline to growth as a result of natural increase plus net in-migration affected 47 *communes* (Type ii). Three kinds

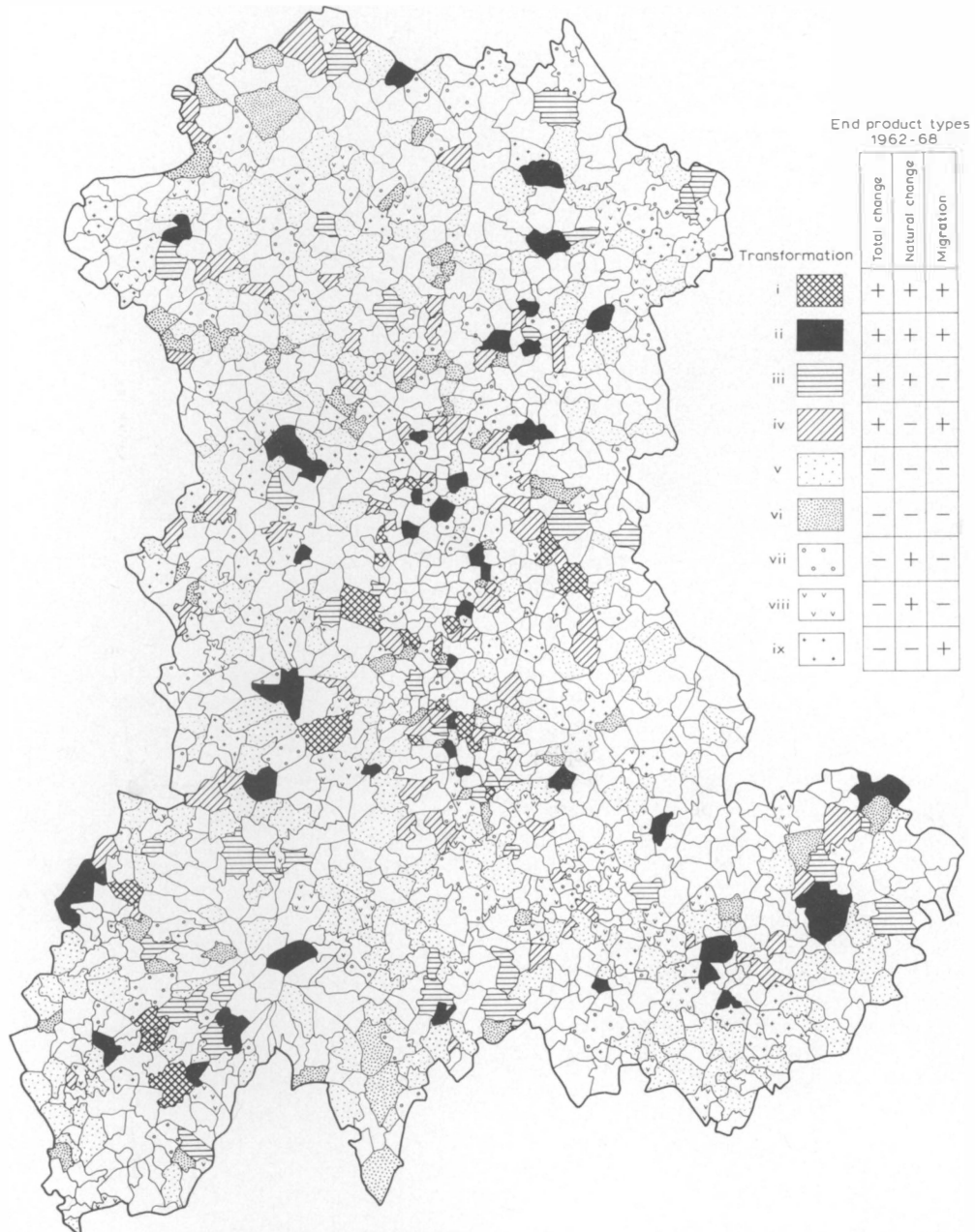


Fig. 6: Nine transformations (i–ix) of source types of population change (1954–62) to end product types (1962–68), indicating demographic characteristics of end product types

of settlement were transformed in this way: – small towns which revived through an injection of new employment in the 1960s (for example, Yssingeaux); settlements which strengthened their tourism function (for example, La Bourboule and Le Mont Dore); and newly-suburbanized *communes* around such small towns as Mauriac and Murat as well as larger centres such as Le Puy, Vichy, and Clermont-Ferrand.

A third type of transformation (iii) involved 41

communes which grew solely as a result of natural increase between 1962 and 1968. Population growth in a further 77 *communes* was produced simply by net in-migration which out-weighed natural loss (Type iv). Local service centres (*chefs-lieux de canton*), such as Blesle, Champs-sur-Tarentaine, Lurcy-Levis and Monistrol, as well as newly suburbanizing settlements, were affected.

A total of 224 *communes* had experienced decline

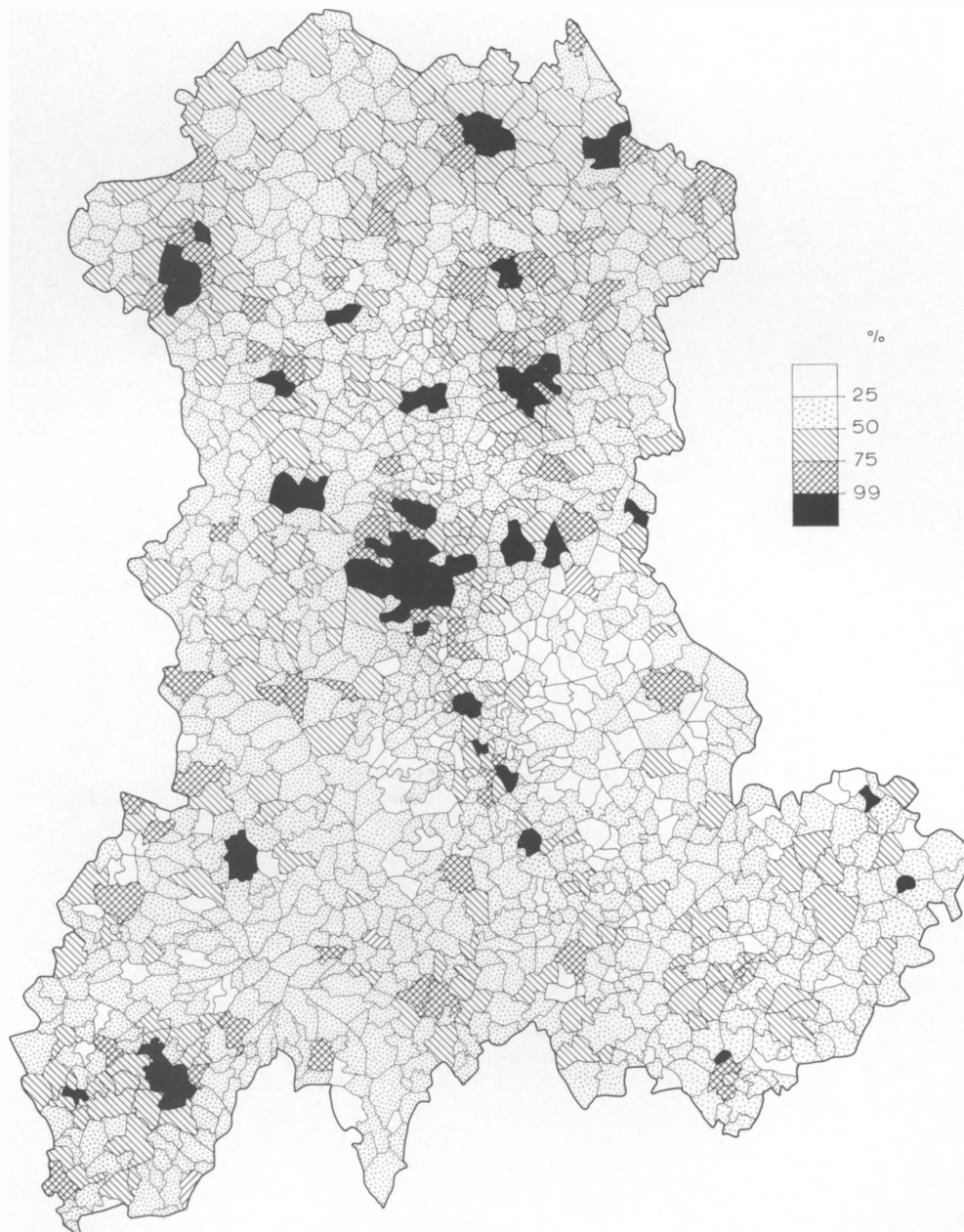


Fig. 7: Population by *commune* in 1968 expressed as percentage of peak recorded figure

between 1954 and 1962 as a result of either natural decrease or net out-migration, but in the following six years their situation deteriorated as both negative processes interacted (Type v). These settlements were widespread in the upland areas of each *département* but were particularly numerous in Cantal and Haute-Loire.

A complete reversal from growth to decline produced by both natural decrease and net out-migration affected 59 *communes* (Type vi) in both upland and

lowland areas, and involved small towns, such as Cérilly and Chaudes-Aigues, as well as more distinctly rural settlements. A similar transition from growth to decline (Type vii) affected 64 *communes*, where out-migration exceeded continuing natural increase. *Chefs-lieux*, such as Massiac, Pontaurmur, Saint-Cernin and Saugues were affected, as well as humbler villages. A variant on this type involved 59 *communes* that had lost population between 1954 and 1962 and where out-migration exceeded natural increase after 1962

(Type viii). The final type of transformation (ix) involved 71 *communes*, where natural decrease exceeded net in-migration.

This diversity of typological change is scarcely surprising in a region with such a wide range of physical conditions and such a long and complicated history of depopulation as the Auvergne. In the 1960s rural decline intensified in virtually all parts of the region which stood in contrast with growth in the Limagnes, around major sub-regional centres, and some, but by no means all, of the 130 *chefs-lieux-de-canton*.

Conclusion

The preceding discussion has indicated the overwhelmingly important role of Clermont-Ferrand in the recent growth of population in the Auvergne. Inter-linked processes of suburbanization and commuting carried that growth more widely into officially-designated 'rural' *cantons* of the Limagnes to the north, east and south of the regional metropolis. Suburbanization intensified during the 1960s, with rates of natural increase and in-migration becoming stronger and thus standing in complete contrast with conditions of population loss registered in the 1930s. The chief tasks facing regional planners in the Limagnes are to accommodate further economic and demographic growth and to avoid extensive environmental degradation as the lowlands of the Auvergne function increasingly in the urban system of the Val-d'Allier.

Elsewhere in the region planners are concerned with adapting weakened economic, social and administrative structures to meet limited but nevertheless significant demands from the declining resident population of the Auvergnat countryside. Abandonment of agricultural land to scrub or rough woodlands is already widespread in parts of the demographic disaster zone in Livradois, Forez and Velay where many *communes* now contain less than 25 per cent of their peak recorded population (Fig. 7). The age structure of residents in these areas is 'elderly' and such a social environment is un-receptive to innovation. Costs of providing services of any kind to a declining and relatively dispersed rural population are particularly high. Tourism and second-home occupation may ensure seasonal injections of people and spending power, but the demographic structure of the disaster zone is such that its population will continue to contract. There is little or no possibility of large-scale in-migration of new residents affecting more than a few sections of the disaster zone that are found in close proximity to the growing employment foci of the Limagnes. Planners must devise schemes to guarantee minimum provision of services at a restricted number of 'holding points' in the Auvergnat uplands. But in this respect, it is disquieting that few *canton* centres display 'healthy' demographic conditions. The majority thus fail to function as 'self-selecting' holding points. Recent

trends of population change in many sections of the declining demographic reservoir have also been unfavourable. Over two hundred *communes* (Type v) experienced both migratory and natural loss during the 1960s after having undergone only one of those processes in the preceding decade. To these disaster settlements must be added more than 120 other *communes* that changed from growth to decline (Types vi and vii). The disaster area thus expanded at the expense of the highland reservoir, where problems of land management under conditions of depopulation are becoming more acute with the passage of time. The broad spectrum of implications that stem from the "demographic inversion" identified by ESTIENNE lie at the heart of the task of planning the Auvergne region.

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