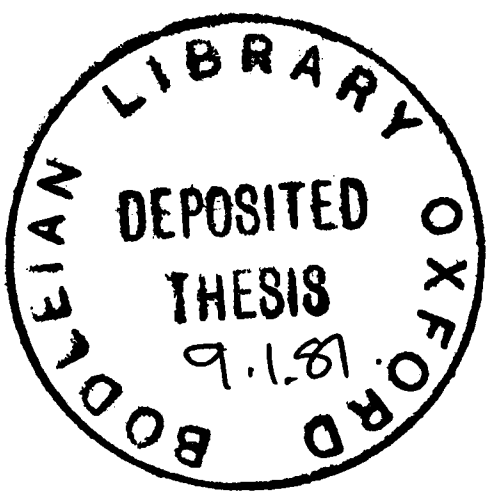
Urban and Rural Perspectives on Population Mobility in France with particular reference to Isère

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CHAPTER 5. POPULATION CHANGE IN ISÈRE

5.1 INTRODUCTION

This part of the thesis examines the spatial patterns and social context of migration within one department - Isère. It concentrates inevitably on the phase of migration after World War II due to the paucity of small area statistics for the period 1891-1936. However, information at the department level is included wherever possible for the years between 1891 and 1946 so that some broad picture of population movement in the earlier period may be obtained.

Isère was chosen for further study essentially because it emerges in post-war years as a destination for migrants of national importance (see Chapter 2). Indeed the same is true for the whole région de programme of the Rhône-Alpes. However it was decided to concentrate the study on one department only to give greater depth of study than would be possible using the 8 departments of the region. As it is, Isère contains 532 communes, which comprise the data matrix and this constitutes a large research task for a single worker.

Isère possesses further advantages for study. It may be considered a microcosm of the Rhône-Alpes, containing the major centre of Grenoble, served by a physically diverse rural hinterland, which exhibits the main physical characteristics of the region, namely the Alps and Pre-Alpine massifs, the Rhône Valley and the Grésivaudan.

The data used in this study of Isère is drawn primarily from the population and agricultural censuses; other sources are also used for particular information, notably the information on municipal housing in Grenoble from the planning authorities[1].

The study is confined to those communes within the present department of Isère, and this excludes those within the suburbs of Lyon which were transferred to the department of Rhône in the 1960s. Changing commune boundaries and amalgamations (e.g. Bourgoin-Jallieu) are treated in terms of their present boundaries rather than former boundaries.

This chapter introduces the major components of population change and migration in Isère, and describes the internal diversity of the department. The subsequent chapters examine in detail the characteristics of those communes in Isère which have lost outmigrants, and the characteristics of the receiving areas, particularly within the major destination of Grenoble. A sample survey of migrants to Grenoble provides additional information on the types of migrant, related to the areas of in- and out-migration. Through this examination of the spatial patterns, and the social context of migration, together with a study of the migrants themselves viewed against the backcloth of the general characteristics of

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[1] Agence d'Urbanisme de l'agglomération grenobloise (A.U.A.G.).

migration in France from 1891 to the 1970s, it is hoped to provide a more complete picture and understanding of migration within one particular department of France.

> 'In approaching a study of France we must try to have in mind both the resemblances and the differences between the two countries (N & S) in the experience and opportunities and difficulties of their respective peoples, and in the varied regions within each'.
>
> P. Vidal de la Blache (1941)

5.2 INTERNAL DIVERSITY OF ISERE

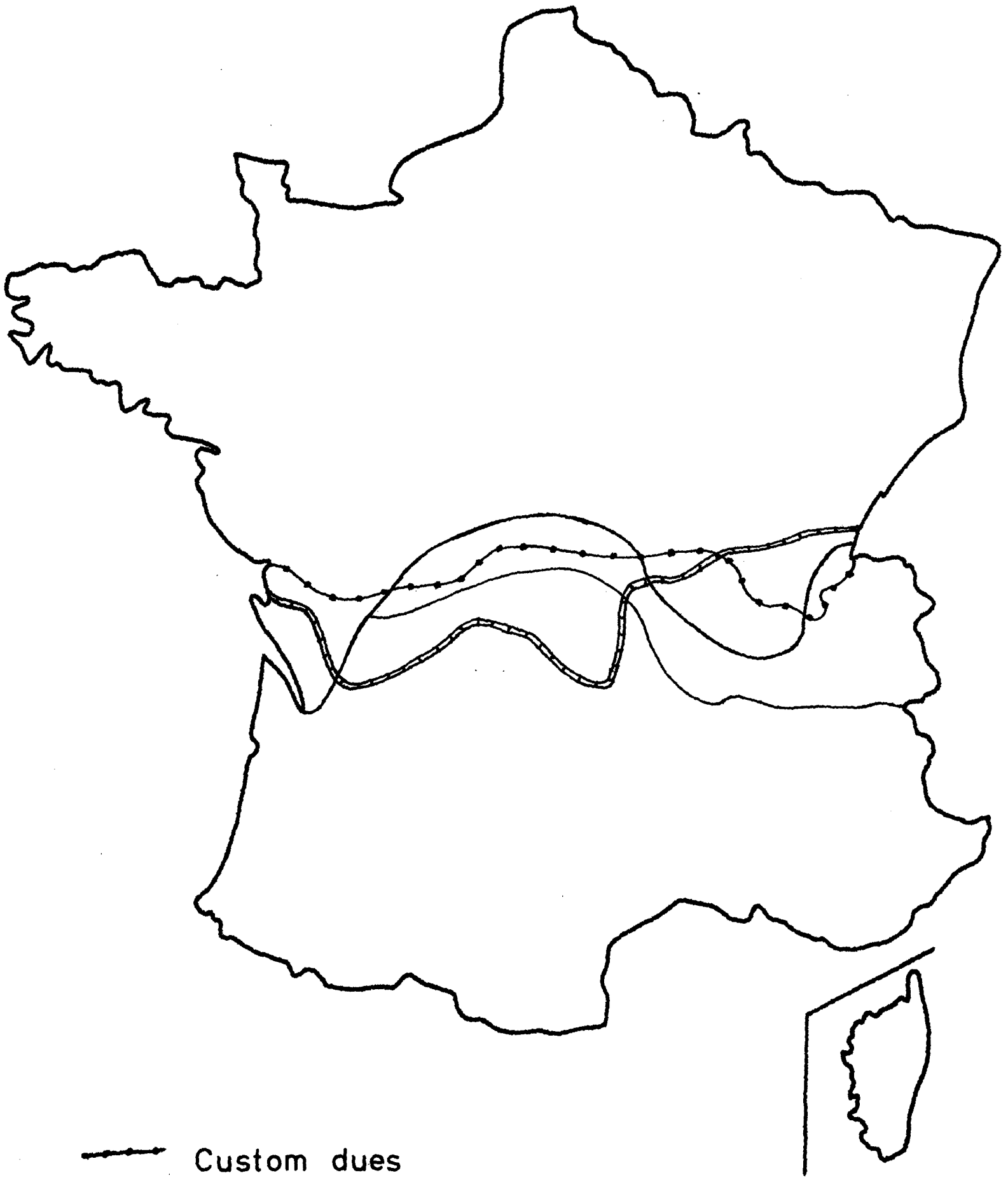
The Rhône-Alpes region, second in France in terms of area, population, and in importance for tourism and university education, is one of the most diversified in France. In terms of physical geography it is divided into three main regions. The mountains play a significant rôle, although the two mountainous regions are quite distinct in character: to the West there are the upland areas and extinct volcanoes of the Massif Central, to the East there is the accentuated relief of the 'Alpes du Nord'. Between the two mountain blocks lies the Rhône-Saône corridor, used throughout history for trade and communication.

However, the physical division between East and West is cross-cut by a climatic division between North and South (Privat 1973): the Southern parts of Ardèche, Drôme, and Isère falling under the drier, warmer and windier influence of the Mediterranean, while the North

experiences a cooler and more maritime climate. This meeting of North and South is emphasised by the old boundaries between customary law and Roman law, between langue d'oil and langue d'oc, and the boundary for custom dues (Fig. 5.1). The variation in terrain and climate, and the meeting of the 'culture' of North and South, help produce a marked diversity in environment which is also reflected in the pattern of agriculture; from the intensive horticultural production of the Rhône Valley to subsistence polyculture in the almost deserted and isolated upland areas of the Alps.

About the meeting of these differences lies the department of Isère. In many ways Isère is a microcosm of the region: an area of strong contrasts. The western/northern half of the department consists of plains and plateaux, the Bas-Dauphiné. The eastern/southern half is mountainous but dissected by the Grésivaudan, the valley of the Isère, and the Drac valley and its tributaries. The variations in economy and life-style are no less distinctive between the urbanised Grésivaudan and the rest of the department. The Bas-Dauphiné is in a delicate phase of transition with the decline of the textile industry and a relatively poor and disorganised agriculture. The mountain areas are adapting to the outgoing flux of emigrants and the incoming wave of tourism. The Matésine is suffering from the closure of the anthracite mines. Distinct from these areas is the

Fig. 5.1 Traditional North – South divisions of France



urbanised centre, based on Grenoble, which is a focus for economic and demographic growth. As such, Isère may be seen as a microcosm of the Rhône-Alpes and indeed of France as a whole. In recent years the emergence of Grenoble as a destination for migrants of national importance, reinforces this parallel. The study of Isère allows a comparison to be made between the migration patterns at the local and at the national scale, while also allowing a more detailed examination of the areas of immigrant reception. Furthermore the characteristics of the migrants themselves may be related to both their areas of origin and their choice of destination. The goal of the study is the analysis of the coincidence between spatial movement and environment.

The ensuing description of the diverse regions of Isère is largely based on field observations made over several weeks while travelling over the whole of the Isère department and most of the Rhône-Alpes region. It also draws on the classic regional studies of the area particularly those by Blanchard (1938-1957), Veyret (1945), Jouanny (1921), Blache (1945). Other more recent works include those published by the Institut de Géographie Alpine (Revue de Géographie Alpine), and by Michoud (1954-63), Léon (1954), Bouchayer (1954), Armand (1974) and Noaro (1971). The department may be divided into five main 'natural' areas, approximately coincident with the boundaries of the agricultural regions

delimited by the I.N.S.E.E. in 1946 (Fig. 5.2). The validity of these intuitively-based regions has recently been confirmed by a statistical study of the communes around Grenoble (Groupe Chadule 1975).

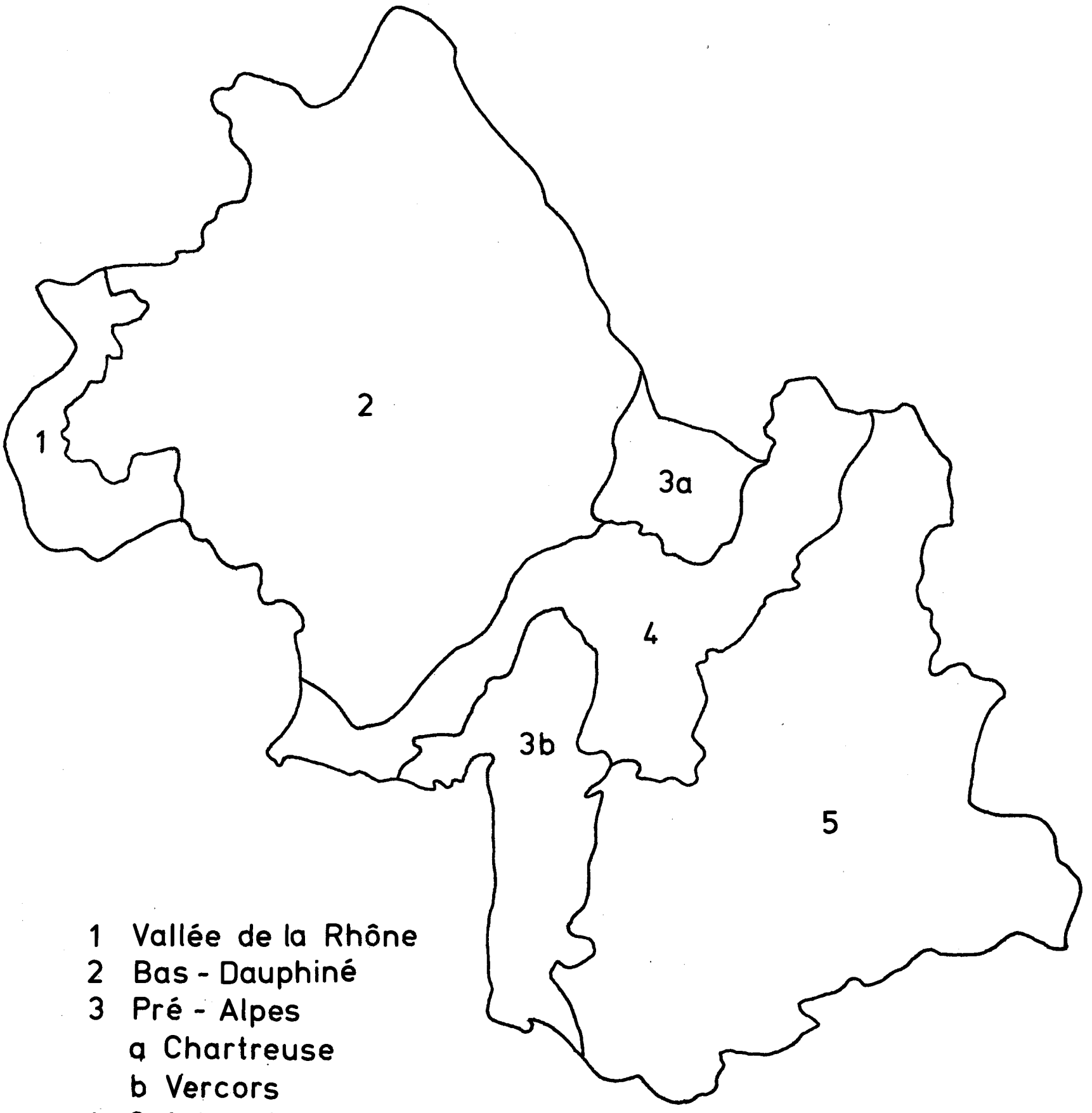
5.2.1. The Bas Dauphiné

The Bas Dauphiné is an area of plains, valleys and plateaux lying between the valley of the Rhône and the Alpine foothills. It has suffered extensively from the effects of glaciation resulting in areas of marshland, pools, and infertile soils. The climate appears constantly humid except in the Vallée de la Rhône and the plaine de Lyon where Mediterranean winds and influences penetrate; but otherwise the summers tend to be thundery, while the winters are cold, dull and grey. In this area, there is no large town to act as a natural focus, (Armand 1974) but several agglomerations of communes, which may give that appearance. The Bas Dauphiné may be subdivided into several 'pays' each with its own individual character (Fig. 5.3).

5.2.1(a) Île Crémieu

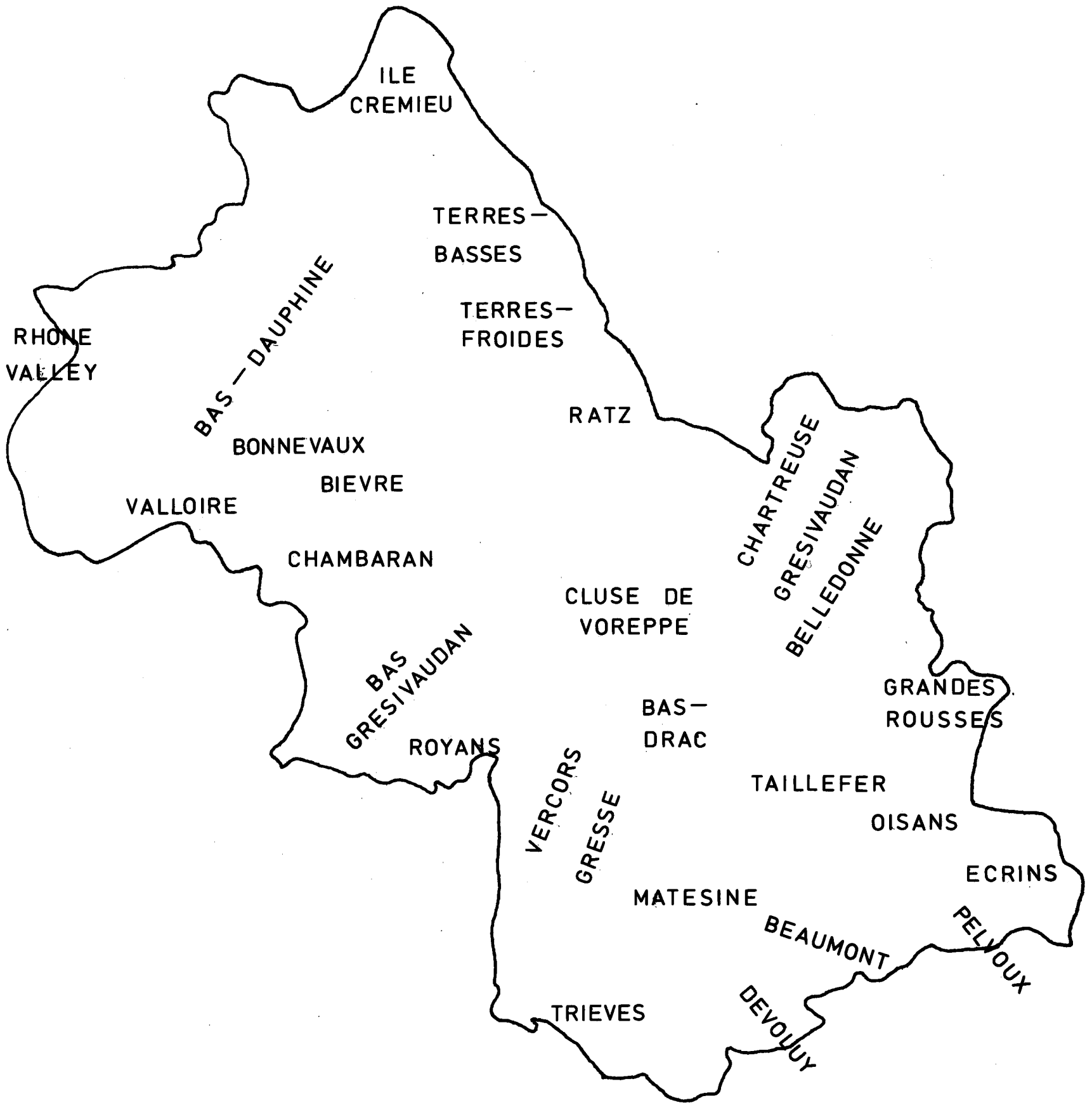
The Ile Cremieu is a calcareous outlier of the Jura rising behind a line of cliffs above the valley of the Rhône and the Lyon plain. It is not grand limestone scenery although some attempt at tourist exploitation has been made at the caverns of La Balme-les-Grottes. Rather it is a scene of rolling green, single track roads

Fig. 5.2 Agricultural Regions of Isère



1 Vallée de la Rhône
2 Bas - Dauphiné
3 Pré - Alpes
a Chartreuse
b Vercors
4 Grésivaudan
5 Alpes

Fig. 5.3 Districts of Isère



linking the small villages and smaller farms. Groups of a few cows graze peacefully in fields bounded by dry stone walling in upright slabs of limestone.

Fig.5.4 Dry stone walling.



Even within this small area there are contrasts. Near Optevoz and the main roads to Lyon and Bourgoin-Jallieu there are some substantial new houses, and several flourishing craft and construction industries. However, outside the houses of the more remote villages - Marcieu, Pressieu, Vercieu - there are to be seen groups of old people, knitting, talking and watching while horse-drawn ploughs work the fields[1]. Behind them the landscape is nothing more than scrub with bilberry bushes 'invading' deserted quarries. The isolation of this small corner of Isère is marked by an almost empty space on the map of population densities. Even Crémieu itself with less than 2000 inhabitants looks to its military past rather than its commercial and industrial present.

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[1]This is less than 30 km. from Lyon.

5.2.1(b) Les Terres Basses

In the Terres Basses the areas of marsh and distorted drainage are being drained. The warm humid summers permit the cultivation of maize and tobacco, particularly to the East. It is predominantly an area of textile industry dispersed from Lyon (Jouanny 1931); in fact a rather ordinary and characterless area. The sprawling motorway-surrounded agglomeration of Bourgoin-Jallieu is a route focus and market centre for the rationalisation of agricultural production of this part of the Plaine de Lyon.

The extension of the boundaries of the department of Rhône in 1966 have greatly reduced the proportion of the Lyon plain within Isère. However the influence of Lyon is widely felt. The opening of the new international airport at Satolas has greatly modified the nature of the area. This, together with the Z.A.C. industriel at Chesnes, and the implantation of the new town at L'Isle d'Abeau, is hurrying the Terres Basses towards the twenty-first century.

L'Isle d'Abeau is not growing in population as rapidly as expected but the impact on the landscape is enormous. It is planned on a vast scale covering 21 communes (significantly twinned with Milton Keynes) and the new quartiers in blending shades of ochre, yellow and pink are rising from the otherwise unspoiled landscape. Industry is already well-established in the charmless towns of Pont-de-Cheruy and Charvieu-Chavagneux.

5.2.1(c) Les Terres Froides

The Terres Froides comprise a very substantial part of the Bas-Dauphiné, the adjective evoking not only their inhospitable climate but also the nature of the soil. The most pronounced relief is found in the East, but the West presents the most unfavourable conditions especially on the plateaux of Bonnevaux and Chambaran. In Bonnevaux, there is little habitation, but an expanse of copse and small lakes. The plateau of Chambaran is one of the most unfavoured zones. It lies 300 to 400 metres above the valleys of the Bièvre and the Isère, is often covered by woods and shrub, and is hampered by a cold humid climate and an argilaceous soil. Both plateaux areas are poor and deserted; peasant life is scattered, with the old villages of characteristic yellow blending into their surroundings. The living here is poor, relying on the rearing of goats and ewes. Tree felling is in progress in afforested areas such as the Bois de Taravas. The clearing of the wooded hills and valleys is making way for small scale agriculture on the stony soil. Many of the lakes are fished to supplement the local food supply and income.

To the east the rearing of cattle is the principal and most practicable economic activity on the plateaux and hills; and milk is sent from this area not only to Grenoble and Lyon, but also to the South by tankers

where butter and cheese is processed. Dispersed industry is by no means negligible; textiles, shoes, mechanical construction, confectionery. Towards the Alpine foothills the agriculture of the **Ratz** becomes poor again, because of excessive rainfall.

On the other hand the valleys are both more populated and more thriving, benefiting from more fertile deposits of soil, and a gentler sheltered climate. The sunny slopes of the Bièvre, formerly dry and gravelly but reclaimed in the 18th century, are covered in fruit orchards and to a lesser extent vines. The western extension of the Bièvre into the Valloire boasts fertile soils and varied agriculture, with Beaurepaire a thriving commercial and market centre. Similarly the Eastern extension of the Bièvre in the Seuil de Rives bears both orchards and vineyards; but is marked also by intense industrial activity, of space-age appearance, but dating back to the Middle Ages for production of swords, steel, and paper.

Thus the Bas-Dauphiné is an area of marked contrasts, with the majority of the population, industry and improved agriculture to be found in the valleys and plains rather than on the 'cold lands' of the plateaux.

5.2.2. The Rhône Valley

To the South of Chasse sur Rhône the left bank of the Rhône forms a sunny corridor within Isère, sheltered

by the wooded hills of the Bas Dauphiné, but subjected to drying and other fierce winds. Its agricultural prosperity lies in the early production of its fruit orchards of peach, cherry, pear and apricot. As in all the Rhône corridor the human settlement is dense and continuous.

The small city of Vienne is of Roman or even earlier origin, but its traditional industries (textiles, shoes) are suffering grave difficulties whilst tourism to the Roman remains appears under-exploited. The old town of Vienne, with its winding narrow hilly streets lined by decaying houses, and its monuments, appears as a reminder of ancient urban civilisation, while not 25 km. away at Péage-de-Rousillon there is a present-day industry, bustling and grimy (Bethemont 1972). Péage-de-Roussillon and St.-Clair-du-Rhône both have important chemical and plastic industries, the most notable firms being Rhône-Poulenc and Rhodiacéta. The Rhône-Poulenc complex occupies a vast area, the grey walls daubed with fading communist slogans and calls for strike action in protest against closure of textile works.

The Rhône valley appears to have more in common with the rest of the corridor and with Lyon in particular; while Grenoble seems far distant over the hills and valleys of the Bas Dauphiné.

5.2.3 The Valley of the Isère

The Valley of the Isère, gouged out of the mountains by immense glaciers, forms a passage for men and communications, and a very agreeable location for settlement. The Grésivaudan strictly speaking consists of the Isère valley above (East of) Grenoble, but the agricultural and human conditions extend also to the short extension of the Lower Drac, and the Cluse de Voreppe where the Isère finally disgorges from the mountains to continue under the overhanging roof of the Vercors in the Bas-Grésivaudan.

The Grésivaudan itself, a classic glacial trough, rarely exceeds 200 metres in altitude and six kilometres in width. The Chartreuse rise steeply to the North-West, while the South-Eastern ascent to the Belledonna Chain is more gentle by a series of foothills and terraces conducive to human settlement. The shelter provided by the Chartreuse range permits the cultivation of tobacco and vines on the Southern-facing slopes. Dairy and horticultural produce find a ready market because of the industrialisation of the valley and the proximity of Grenoble.

Until the 19th century the Grésivaudan was thought of as a highly prosperous and favoured agricultural zone, but the discovery of 'houille blanche' has entirely changed the face of the valley (Bouchayer 1954). The paper industry, then electro-metallurgy and electro-chemical industries have prospered and the former agricultural

villages - Froges, Domène, Brignoud - have become miniature industrial centres. Indeed from Grenoble the Grésivaudan is built up as far as le Champ près Froges (about 20 km from the city centre) but beyond this point the countryside becomes more agricultural, the valley slopes and bottom bearing vineyards, maize, and vegetable gardens. The transformation from agriculture to industry has been even more marked in the lower Drac, where the poor gravelly soil was less suited to agriculture. Paper working and, above all, electro-chemicals dominate the industrial landscape at Jarnie, Pont de Claix and Champagnier.

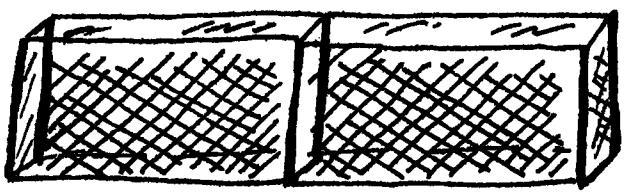
The city of Grenoble itself spreads its urban tentacles over the surrounding countryside. The former suburb of St. Martin d'Heres, although contiguous, is now the second city of the department, while residential surburbs have been established on the slopes of the Chartreuse and the lower slopes of the hills beneath Chamrousse, are dotted with a mass of luxuriously-appointed homes, within easy commuting distance of Grenoble.

North West from Grenoble to the Cluse de Voreppe the industrial landscape is again predominant. The River Isère is closely followed by the new motorway A48 and by other major roads on each side of the valley. From the railway station in Grenoble and the N.W. sector of the city containing the Nuclear Research Station and Army

barracks, the industrial momentum is maintained. The cement industry has been supplemented by electrical and electronic industries, construction works and laboratories.

Beneath the Isère elbow at Voreppe the Isère valley changes character at the plain of Moirans to an agricultural landscape comparable to the Upper Grésivaudan. After the calcareous knick-point of Polienas, which even glaciation could not completely erode, the valley opens out to a more totally agrarian and less populated landscape. It is from this region that the famous production of walnuts derives. As one progresses further South towards the Drôme maize and tobacco cultivation predominate, the landscape being dotted with maize-drying cages, of poles and wire netting about 2 m high x 40 cm wide of varying length, in which maize cobs are stacked and dried.

Fig.5.5 Maize-drying cages



5.2.4 The Pre-Alpine Massifs

5.2.4(a) The Chartreuse

The Chartreuse is probably the most individual of the pre-alpine massifs standing as it does, fortress like above the Isère and the Bas Dauphiné (Blache 1930). The summits scarcely reach 2000 metres but the internal relief is extremely fragmented and the basin of St. Pierre de Chartreuse

is relatively small and inaccessible. The Massif receives the full force of oceanic storms, which combine with the continual coolness and the lack of sunshine to militate against agricultural production. Agriculture is extensive, being limited to cattle rearing or to exploitation of the forest cover. Population density is correspondingly low, at its greatest along the Grésivaudan where protection from the climate allows vineyard cultivation; and is also conducive to convalescent and hospital centres as at St. Hilaire du Touvet. There is some tourist development based on the history of the Carthusian monks and the continuing production of Chartreuse at nearby Voiron; however there is very little that may be seen by the average visitor. The Gorges du Guiers Mort are worth a hair-raising visit but provide inadequate access to the snow covered slopes for full development of ski potential.

5.2.4(b) The Vercors

The Isère contains only that small part of the Vercors known as 'les quatre montagnes' of Autrans, Méaudre, Lans and Villard-de-Lans, the 'montagnes' being used in the sense of a pastoral organisation, rather than a massif. The mountains rise high above the Drac with peaks well over 2000 metres, the limestone wall impassable except by foot along the Western boundary with the department of Drôme. Accessibility is, however, generally easier than in the Chartreuse, and the aspect is less forbidding and more open. The series of ridges and

valleys - many of them gorge-like - and the relatively cool climate discourages cereal growing, and agriculture is concentrated on the production of fodder and the pasture of cattle. The local breed of red Villard-de-Lans cattle is one of the declining rustic breeds, bred originally for draught rather than milk or beef, and consequently with no particularly desirable characteristics for the modern beef or dairy industry.

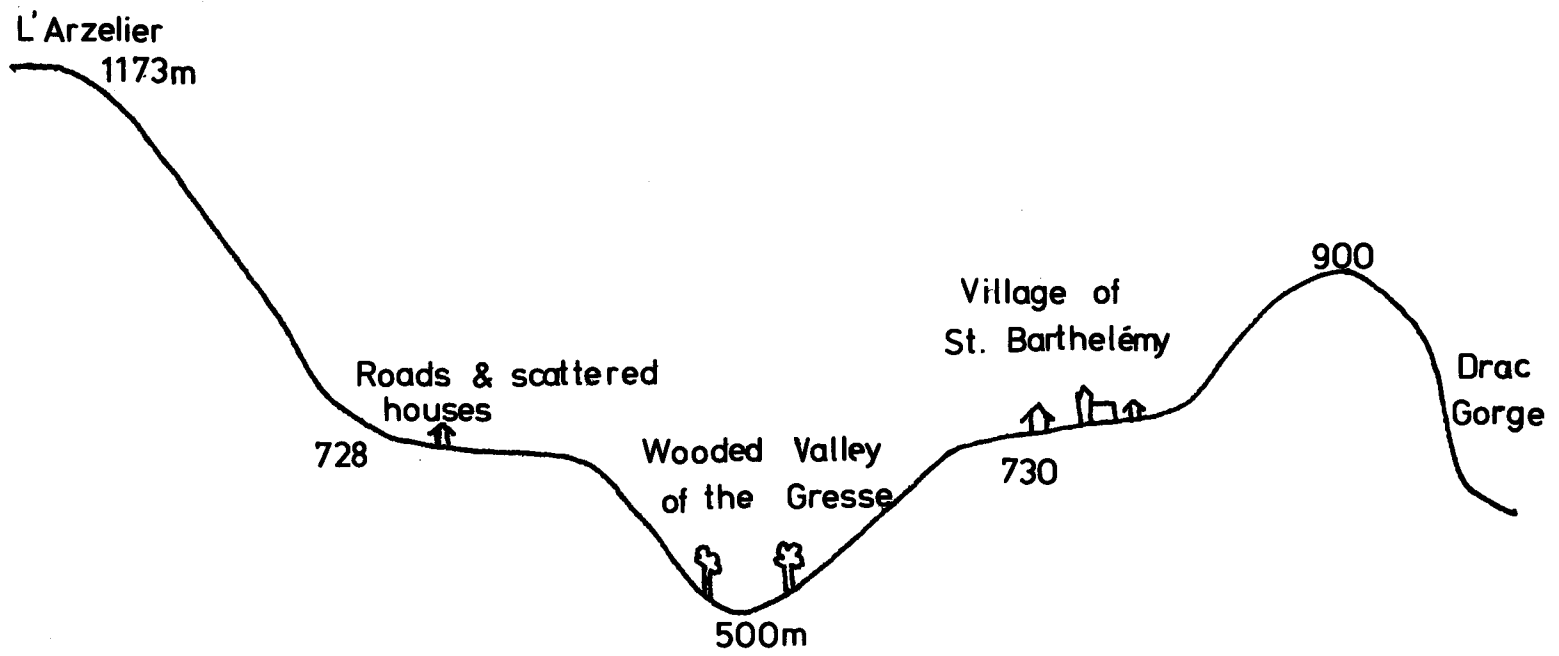
The rural exodus has been considerable from this rather poor limestone region. An increasing number of farms have been taken over by outsiders for the profits from woodland. Similarly a growing number of second homes and smart villas are appearing for the use of commuters and tourists. Tourism is here of more importance than in the Chartreuse, particularly since the Olympic Games (1968) which took place at Autrans (les courses du fond) Villard-de-Lans (la luge) and St. Nizier du Moucherotte (ski-jump), as well as the major resorts in the Alps themselves. Villard-de-Lans is the major sporting centre with over 30 hotels, and it also boasts convalescent facilities, particularly for children. Consequently there is a boom in both the construction industry and the development of services in these beautiful and healthy surroundings.

5.2.4(c) The Southern plateaux

To the South of Vif and Laffrey the landscape changes. One can no longer distinguish either the broad communications

channel which is so distinctive a feature of the Grésivaudan, nor the abrupt massif of the Vercors. Rather the landscape is formed by a sequence of irregular plateau surfaces. Indeed the pattern of the landscape and the human use made of it, is so visually striking that a field sketch was called for, reproduced here.

Fig. 5.6. The Southern Plateaux: Field Sketch



A complete miniature ski resort has been established at the Col d'Arzelier with two smart hotels, skilifts, new chalets, and an abundance of clear little used ski slopes. The altitude of this area tends to minimise the climatic advantages of a more southerly latitude, but there is little large-scale exploitation of skiing potential, or other tourist attractions. The scenery is impressive, notably in the form of the Mont Aiguille (needle mountain) one of the 'seven wonders of the Dauphiné', but communications are slow and difficult, because of the tortuous eroded shapes of the land. In particular the deep narrow gorges of the Drac force the

railway-track into an extremely circuitous route between Grenoble and La Mure. The one open space North of La Mure towards the lakes of Laffrey is not even ten kilometres in length. Communications perforce run North-South rather than East-West.

It is not surprising in these plateaux and likewise in the Gresse and Trièves, that there is only a low density of population, employed occasionally in tourism as noted, but otherwise supported by a pastoral and forest economy. This is really the only area of Isère where transhumance is still part of the way of life, although it now more commonly involves sheep than cattle. The dairy industry is still prominent (Gresse en Vercors being the site of the first dairy cooperative founded in the department as long ago as 1879), supported by the cultivation of artificial grassland, the yields from which have doubled since 1945. The improvement of agriculture (from the regrouping of holdings) has been made possible by intense outmigration.

There is no major urban centre, tourism is limited, communications poor, and evidence of rural depopulation abounds. The small village of La Bâtie at the foot of the Mont Aiguille boasts only 12 houses, three of which are empty and rapidly deteriorating, while the others are a mixture, some with thatched roofs, one a very new chalet. Nearby at the tiny hamlet of Les Pollas there is only one farmhouse still inhabited.

From the Trièves into the Beaumont the relief is even more attenuated with savage erosion by the Drac beneath the snow-capped peak of L'Obion. The damming of the Drac at the Barrage du Sautet has introduced some management to its waters and facilitated the production of hydro-electricity, but it brings little direct benefit to the area in the form of employment, or even tourism. However the cantonal capitals of Clelles and Corps do benefit from direct communications with Grenoble, as does Mens to a lesser extent, located as it is in a minor agricultural basin between these two main routes.

5.2.4(d) The Matésine

The Matésine is the coldest and most humid of the Pre-Alpine plateaux. It is of essentially industrial appearance although not without some cattle rearing. Industry has been based on the location of anthracite mined between La Mure and La Motte d'Aveillans. Mining reached its peak in 1966 when 800,000 tonnes were extracted, but by 1971 production had fallen to 540,000 tonnes and only employed 1400. The closure of the mines in 1975 has caused considerable hardship, although several new firms have become established there. The problems of new firms are however psychological as well as geographical (Livre Blanc 1975). The miners find it difficult to readjust because mining confers advantages such as housing, heat, light and medical services provided by the mining companies, and also provides the opportunity for part-time agricultural work. With unemployment in

mining and in associated industries, there has been an immediate stimulus to emigration. La Mure is one of the few communes of its size (5,000 - 10,000 inhabitants) that is losing population, despite the lack of alternative urban centres in the vicinity.

Industry has left its mark. The towns are grimy, dirty and grey. Some shops and businesses have closed, silent witness to the cumulative effects of emigration and to the reduced spending power of the remaining population. Miners cottages clustered on shabby estates are small and uninspiring, grey walls are daubed with communist slogans. Despite these protests, and despite government action to attract new industry, the economic future looks sombre.

5.2.5. The High Massifs

The high massifs of Isère rising initially as a barrier above the Grésivaudan become more and more compact towards the East, although breached by some major valleys. The high massifs are often considered as an entity under the title of Oisans, (Allix 1929) although the Belledonna chain is somewhat distinct, lying as it does between the Grésivaudan and the valley of the Romanche. The high altitude (up to 3500 metres in the Grandes Rousses) produces intense cold with continuous snow and ice cover on the highest peaks.

The Valleys

The system of valleys revolves around the industrialized course of the Romanche. The Romanche gathers its waters from the Meije carving a way through the mountains until it is held back by the Barrage du Chambon, one of the many hydro-electric installations of the Drac and Romanche. From the barrage the waters tumble through the 'Gorges of Hell' to the U-shaped valley so characteristic of the area. This upper course is interrupted by a high plain at 700 metres[1], which is the centre of the Oisans: the course of the river is now canalised and the landscape, neat with field boundaries, is reminiscent of a polder.

The town of Bourg d'Oisans is extremely lovely, benefiting from the proximity of the tourist centres of L'Alpe d'Huez and Les Deux Alpes. The pleasant aspect of this high plain is lost in the industrialisation of the lower valley of the Romanche. The valley is very narrow and steep, and industry has taken full advantage of the slope at Livet et Gavet for 6 hydro-electric installations and chemical industries, notably Péchiney and Compagnie universelle d'acetylene, producing metal (ferrous) alloys, aluminium, carbides and silica.

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[1] Former site of Lac St. Laurent which breached its nick point (the site of Bourg d'Oisans today) in 1219, causing terrible flooding.

Only one road follows the valley, which is too steep and insufficiently populated to justify a rail link.

> 'Dès les gorges de Livet, des arbres courbés par un vent qu'exaspère l'étroitesse du passage, un soleil dérobé par l'abrupt de 2000 mètres, des blocs énormes dévalés dans cet étrange jardin de rocailles composent un décor sinistre. Fumées et rougoiements nocturnes envahissent la rue d'habitations ouvrières déshéritées qui jalonnent la vallée. Les autres vallées, dans leur sévérité, n'ont pas la même sorte d'inhumanité.'
>
> (Dubreuil 1971)

The other valleys are not on the same scale, either for industry and communications, or in the severity of their landscape. The Veneon rising in the high Oisans and joining the Romanche at the plain of Bourg d'Oisans is a dead end. The single track road is poor, unkempt and dangerous beyond St. Christophe en Oisans, finally petering out at La Bérarde. The small village of St. Christophe is set in awesome surroundings, with steep slopes grey and barren, cliffs of bare rock above interminable scree slopes, and the river braiding its course through banks of gravel. St. Christophe with a population of less than 100 is the centre of the second areally large commune in France[1] (after Arles), containing 33 peaks each between 3000 and 4000 metres, and 25 cols of over 3000 m. The mountains effectively exclude most of the sunlight

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[1] 24287 hectares.

with the whole village representing a dark and silent indication of the poverty of the environment and the peasant conditions of earlier years. Indeed in the 19th century St. Christophe knew a considerable prosperity, with over 85 of its population working as mountain guides to a mainly British clientèle. However since that date there has been considerable outmigration and houses are now decaying by the roadside. It is difficult to envisage any future for the valley beyond Venosc, the lesser of the 'Deux Alpes', which is used for skiing.

The valley of the Eau d'Olle (with the beautiful villages of Allemond and Oz on the slopes) exhibits a much gentler complexion, green and lush in comparison, although this valley has no pretence to development. Tiny patches of corn and groups of three or four goats are to be seen between the scattered houses which serve as shelter for both people and animals. The potential of the valley would be improved if the Eau d'Olle was harnessed at the Defilé de Maupas and the communications improved to St. Jean de Maurienne in Savoie via the Col du Glandon and the Col de la Croix de Fer which at present is closed for at least half the year.

To the South of the Romanche the heavy outlines of the Taillefer are breached by the valley of the Lignarre which opens up a difficult route towards the Plateaux of

the south via the Col d'Ornon and over the watershed of the Taillefer following the valleys of tributaries of the Drac. These valleys - the Bonne, the Malsanne and the Roizonne - are among the most isolated in real terms in the whole of Isère, despite their straight line distance from Grenoble, being barely more than 50 km. Valjouffrey and Valsenestre are almost deserted. The scenery is heavy, the climate cold, agriculture poor, through routes impossible. Even the local names reflect the difficulties: La Roche, Malhaubert, le Désert, la Morte, Vaunoire, le Diable.

The mountains themselves are of limited value with the mineral resources too widely disseminated for economical working in the 20th century. Outside the central plain of Bourg d'Oisans, agriculture has scarcely moved beyond traditional ways; poor cereals, potatoes, and transhumance. The recent use of mountain areas for industry has brought less advantages than first thought; it has been limited to the valley of Livet and Gavet and even here there has not been sufficient attraction to prevent overall emigration.

The main use of the mountains has been in the phenomenal rise of winter sports: encouraged by the Winter Olympics of 1968 at Chamrousse and L'Alpe d'Huez (bobsleigh). Three major ski resorts have developed. Chamrousse, in a beautiful setting above the spa of St. Martin d'Uriage

in the Belledonna chain, close to Grenoble, offers attractive skiing and social life in a relatively short season (at only 1600 m). Immediately after Easter the season ends, the shops and restaurants put up their shutters, and the service population moves to its alternative businesses on the Mediterranean coast.

Alpe d'Huez is the major resort of international standing. Road access is via the valley of the Romanche and a radiator-bursting series of hairpins to reach the slopes at well over 2000 m. However the heliport is in constant use to enable its users to take advantage of the remarkable amounts of both sun and snow to be found. The new resort situated in a cirque offers views to the South to the glaciers of the Meije and Pelvoux; its smart hotels and shops in contrast to the small village of Huez, the commune capital boasting an old Roman church, and now abandoned anthracite mines, and even more ancient copper and lead ore workings.

Les Deux Alpes is a resort of lesser altitude and lesser attraction. The scenery and slopes cannot match those of Alpe d'Huez in scale, and the resort itself straggles for over a kilometre with neither the charm nor the freshness of Alpe d'Huez. However it is now a major resort, established over 30 years, and although still expanding, is currently already capable of accommodating about 5000 tourists at any one time.

This survey shows that Isère is a department of enormous variety in its environment and the same is also true of the nature of the human response to the variation in environment. The primary response of changing population distribution over the period 1891-1975 is the subject of the next section of this thesis.

5.3 POPULATION CHANGE IN ISERE

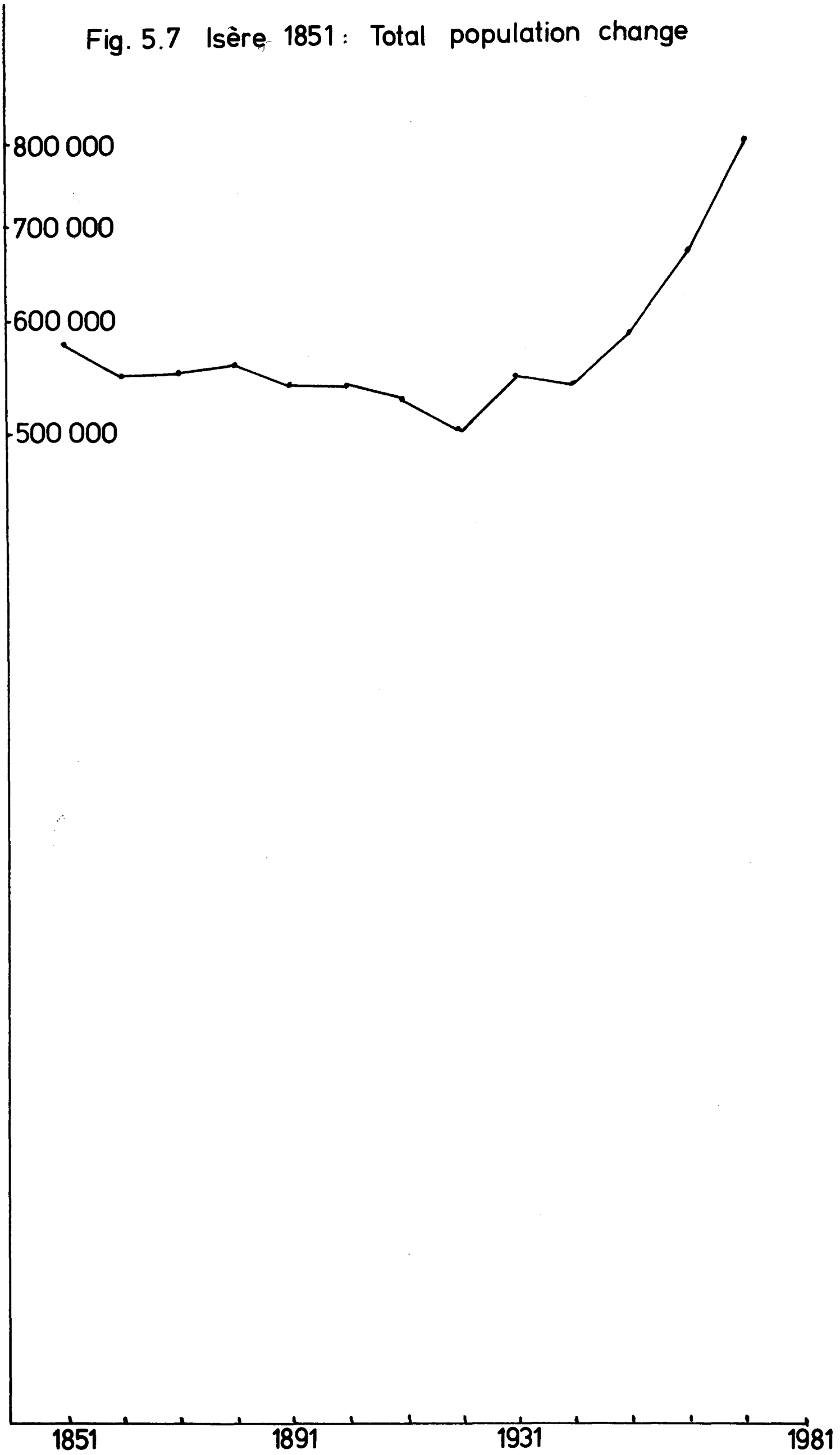
Isère is one of the larger French departments, both in terms of area and population. Since 1851 its population has not fallen below half a million, and has increased beyond three quarters of a million in the 1960s and 1970s. During the preceding century Isère maintained its population level better than many of the neighbouring departments, due, at least in part, to a period of early diffuse industrialisation, particularly in the mining and hydro-electric industries.

The census of 1801 recorded the population of Isère as 410,688 and this had risen sharply to its nineteenth-century peak of 579,497 in 1851. From this population peak there was a decline to 502,027 in 1921. This decline in population was due both to outmigration and to natural decline. Brunhes (1952) considers outmigration a natural consequence of the transhumant way of life predominant in the more mountainous areas. Movement arises for market and trading reasons. These migratory habits and the climatic difficulties of winter impelled the upland dwellers to seek more remunerative winter occupations, and thus started a habit of seasonal outmovement[1]. This seasonal outmovement is thought by Corbin (1971) to be the forerunner of more permanent outmigration to areas

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[1] Most of the seasonal workers from the Oisans worked as peddlers, (Brunhes 1952 p.145-6), whereas other areas had other specific occupations e.g. masons from the Corrèze.

Fig. 5.7 Isère 1851: Total population change



where it is easier to make a living. The gross migration flows examined earlier at a national scale show that Isère sent migrants particularly to the urban areas of Lyon and Marseille.

From 1921 the population began to increase, steadily in the inter-war years, then extremely rapidly from 1946. This rapid growth of population from 542,573 in 1946 to 860,378 in 1975 is related to the post-war development of industrialisation and urbanisation; and may be accounted for by the resurgence of natural growth, the development of foreign and internal migration, and the rapid extension of the urban area and the increasing accessibility of the rural areas for commuters and those with second homes.

The fluctuations in absolute numbers are matched by changing spatial distributions of population within Isère. Figs. 5.8a to f show the changing pattern of population density at dates corresponding to the population minimum of 1921, the immediate post-war period and the changing situation at the last three censuses 1962, 1968 and 1975. The overwhelming pattern is of concentration within the Grésivaudan, lower Drac and Cluse de Voreppe around the Grenoble agglomeration, and to a lesser extent the Rhône Valley. The increase in total population is indicated by the increasing number of communes with a population density of over 500 people per square kilometre. However, this concentration has occurred at the expense of the

Fig. 5.8 Population density of Isère

a. **1891**

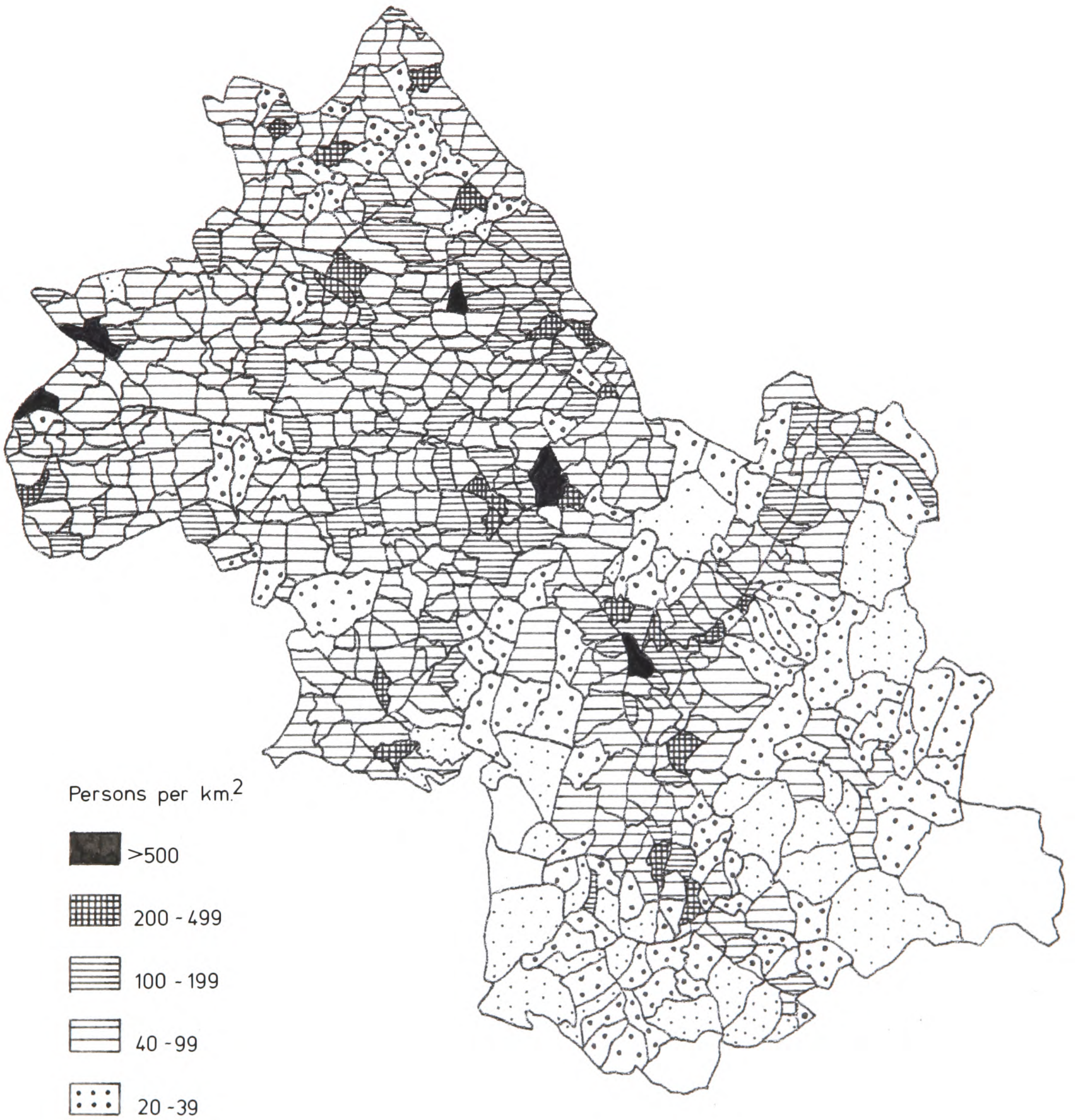


Fig. 5.8 b. 1921

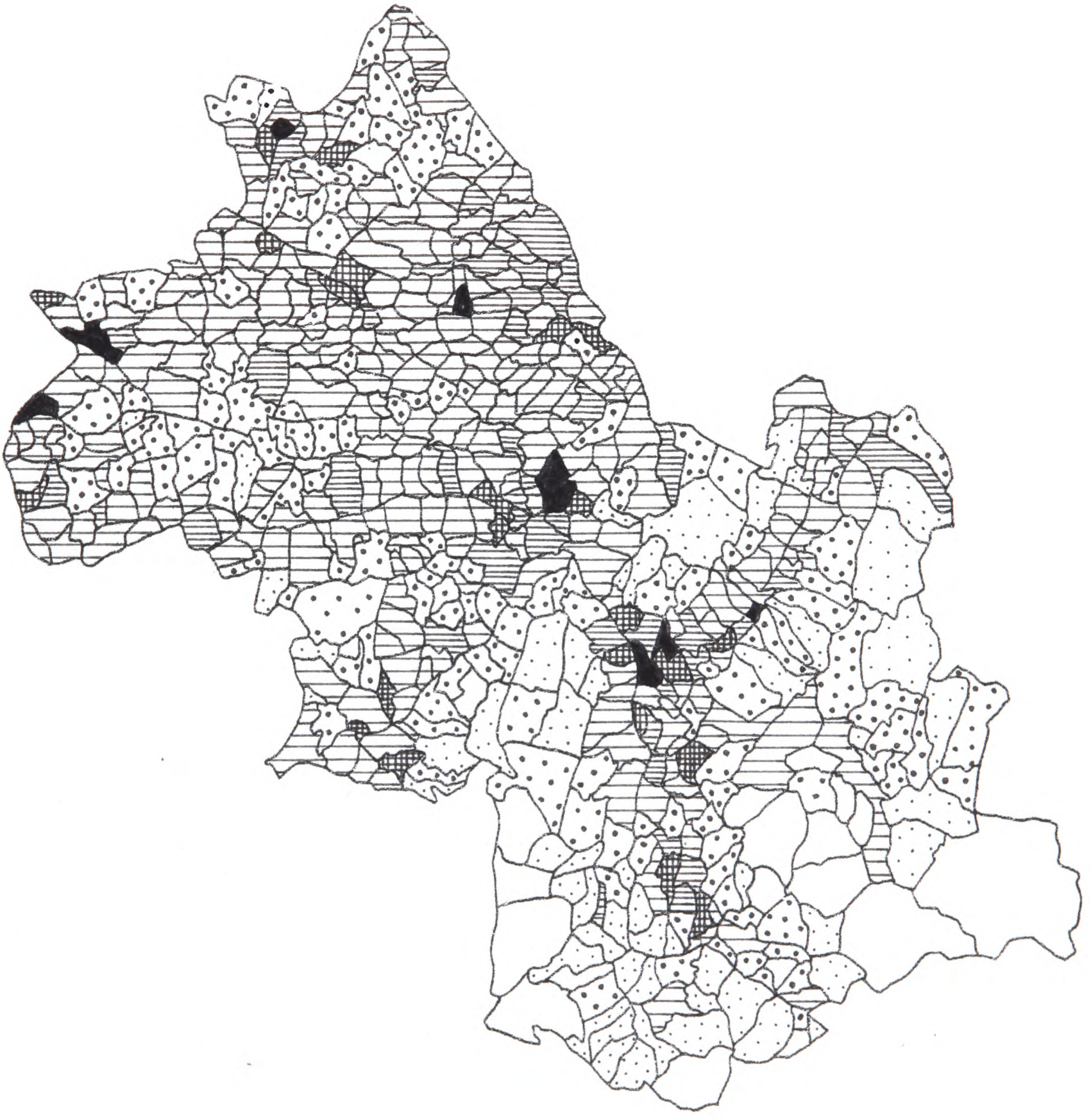


Fig. 5.8 c. 1946

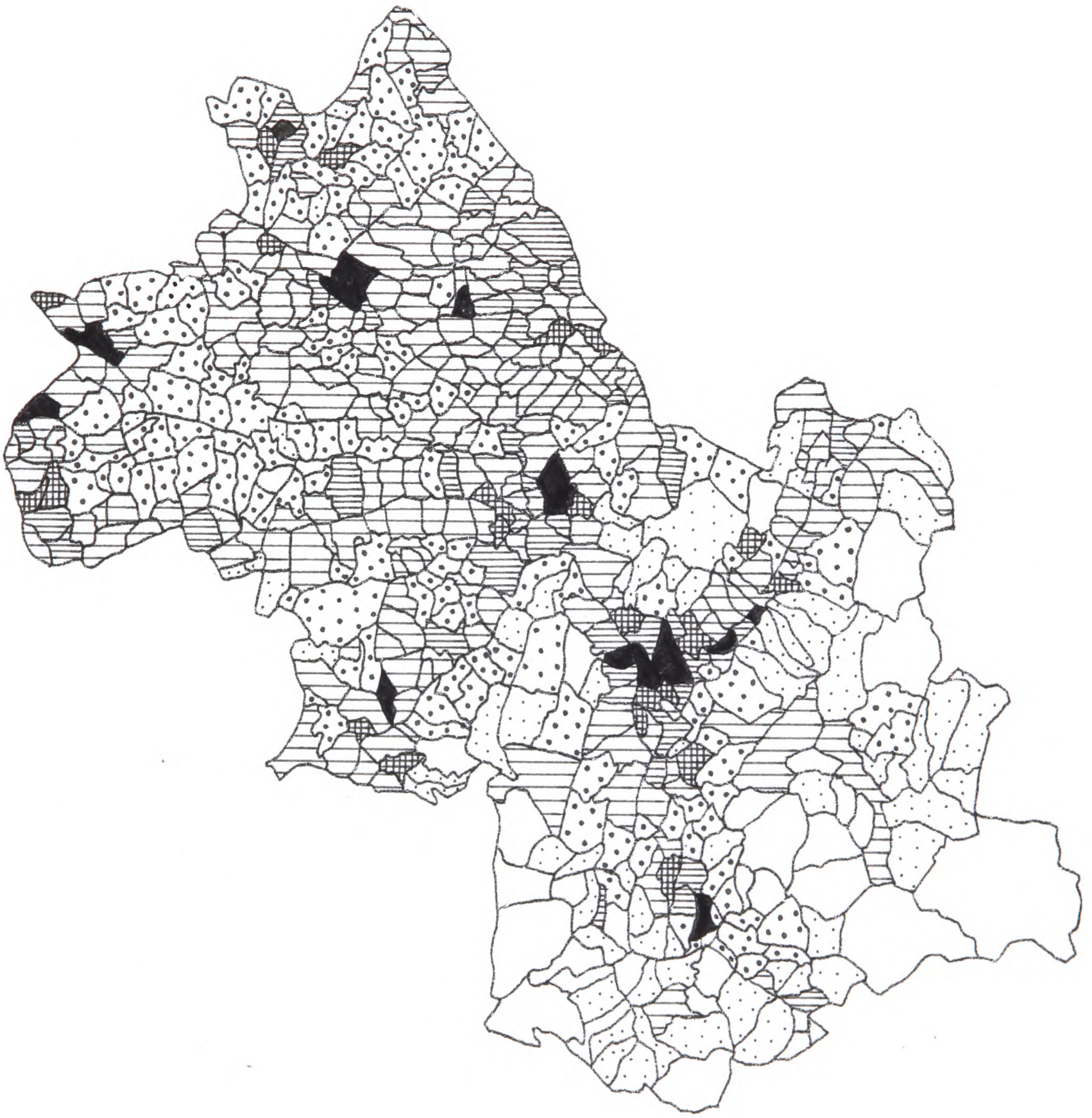


Fig. 5.8 d. 1962

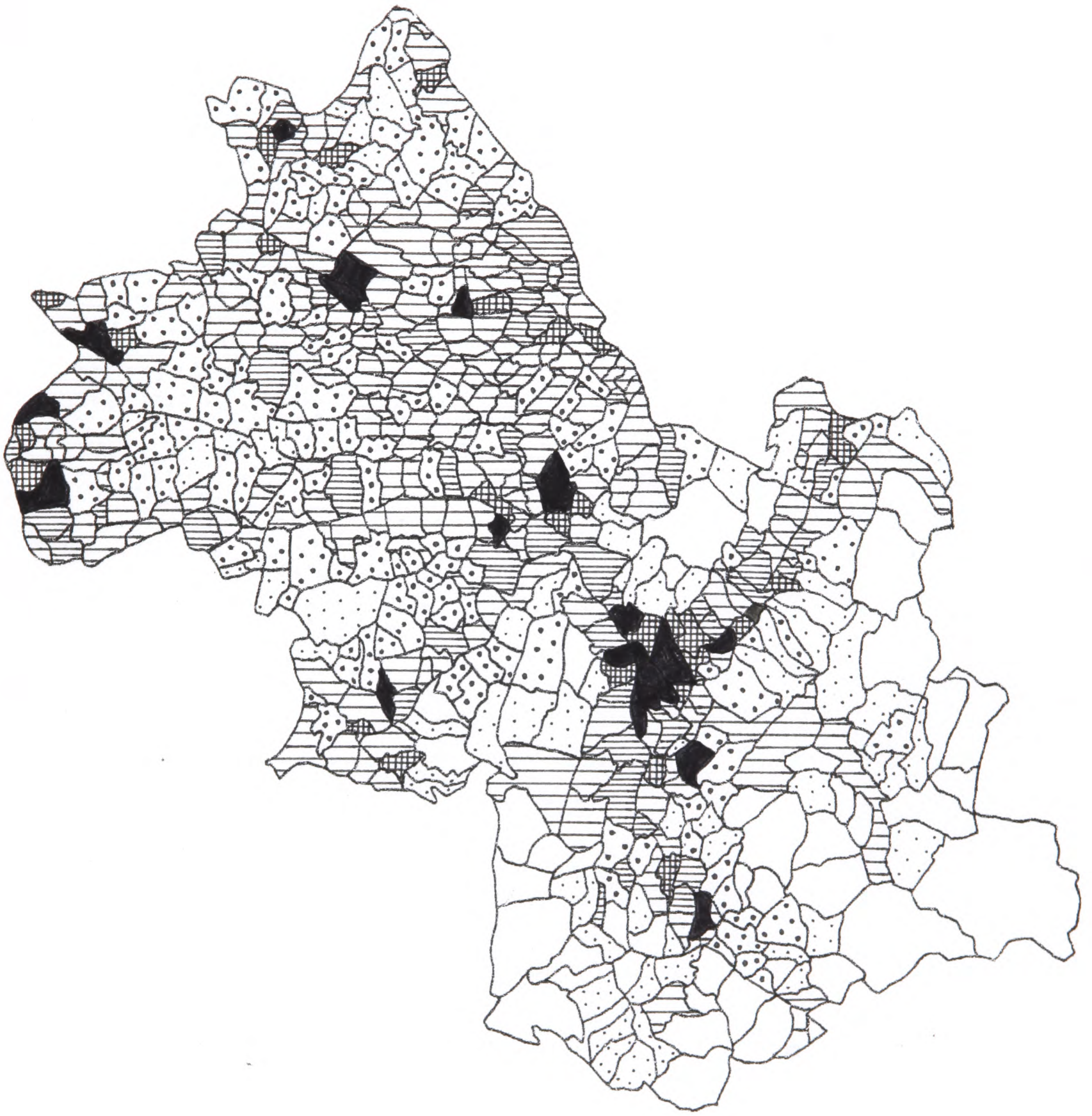


Fig. 5.8 e. 1968

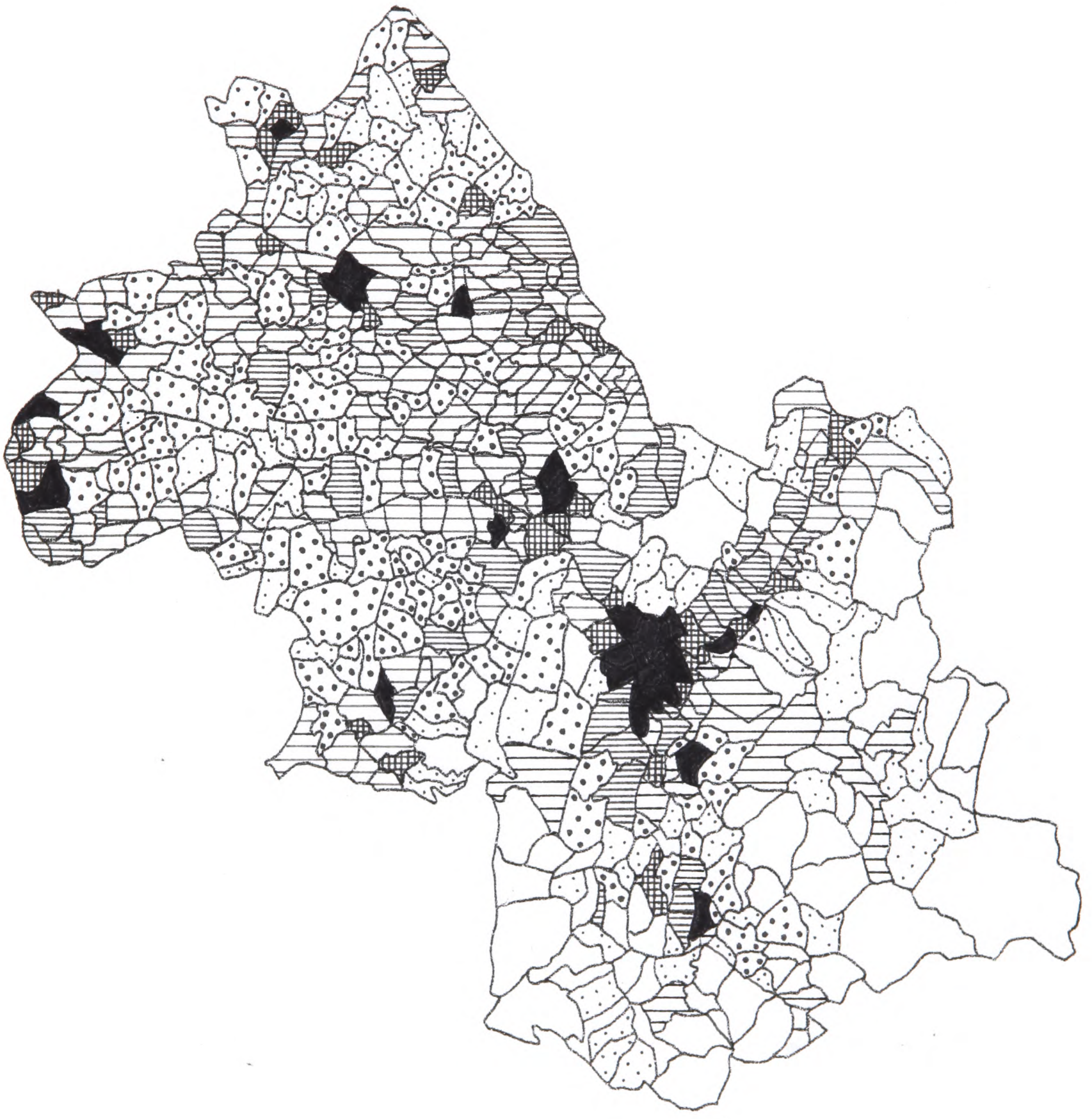


Fig. 5.8 f. 1975

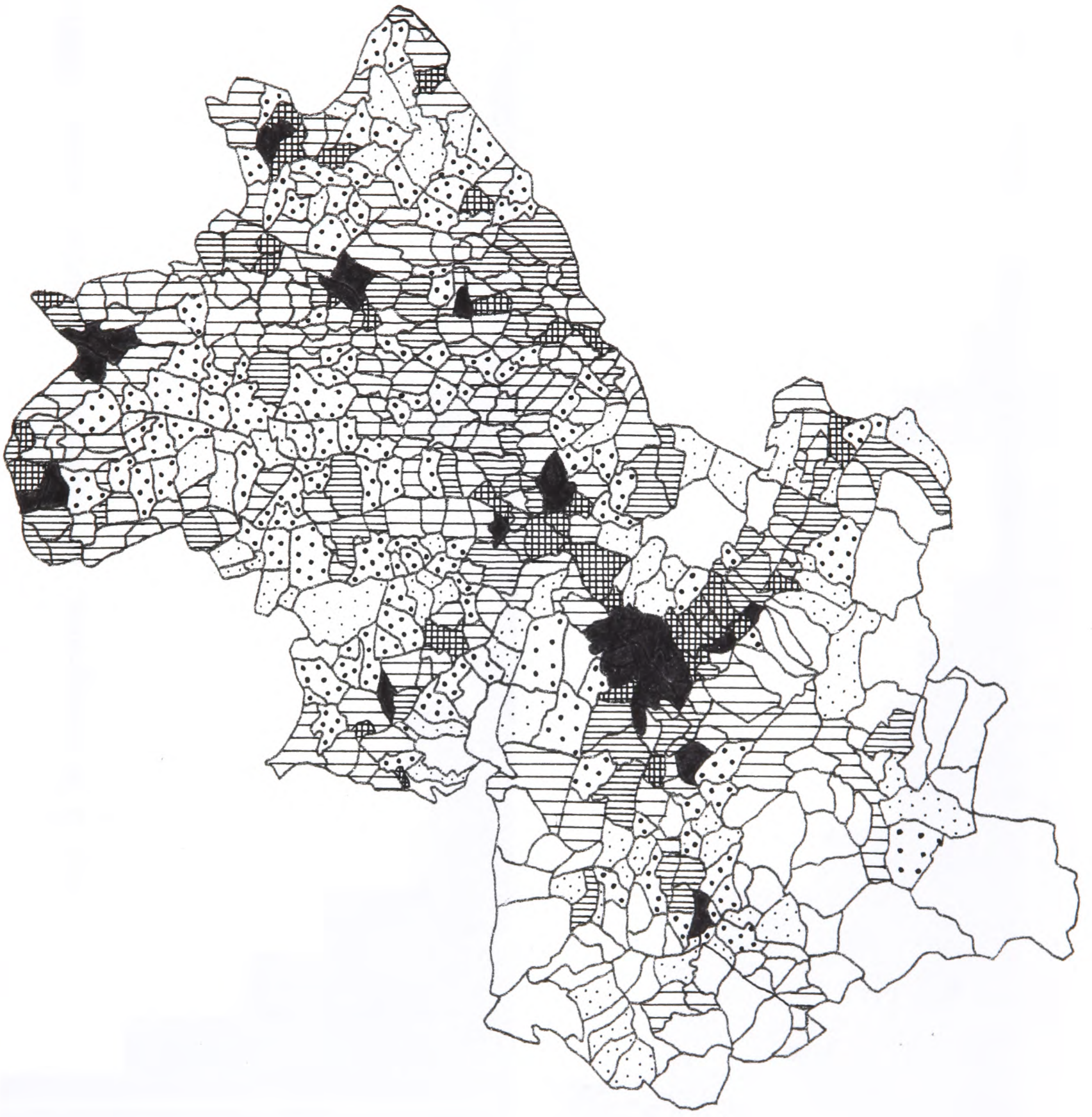


Fig. **5. 9** Histograms of commune population sizes **1891-1975**

b. **1921**

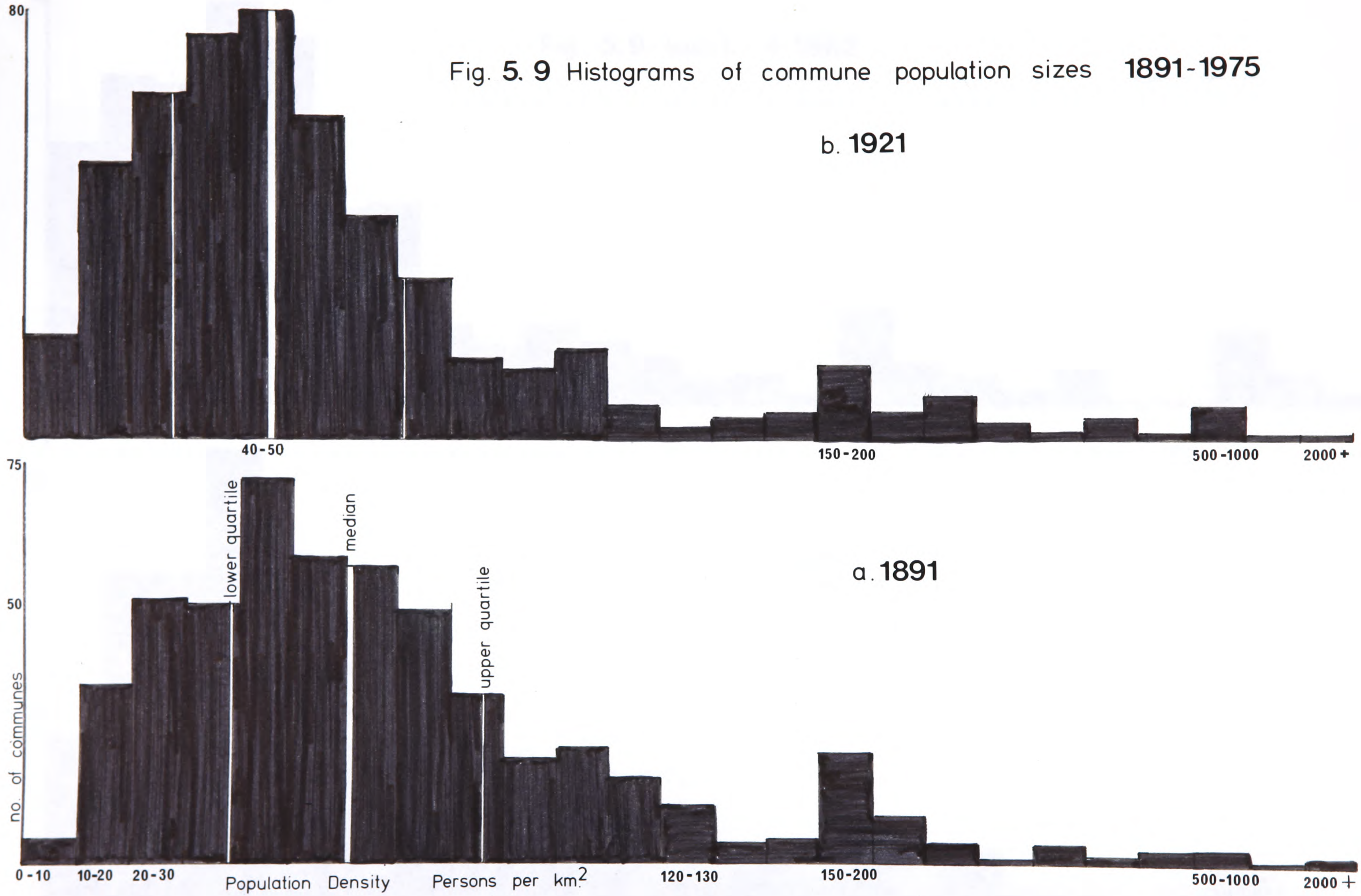
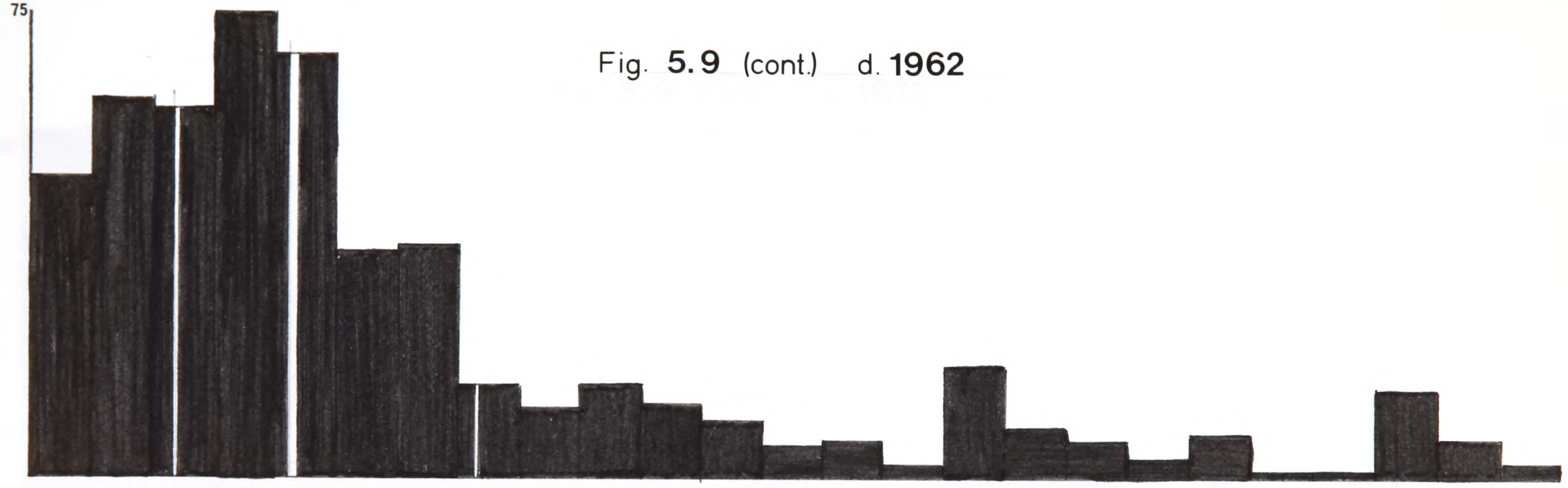


Fig. **5.9** (cont.) d. **1962**



c. **1946**

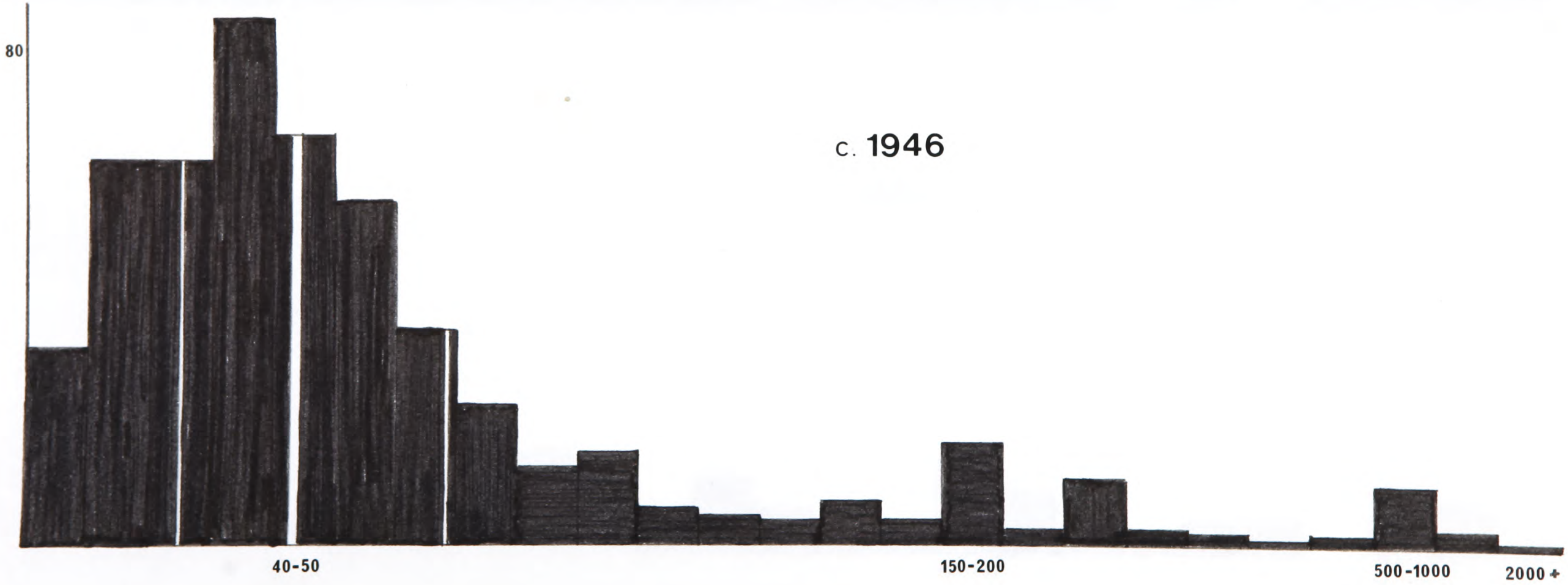
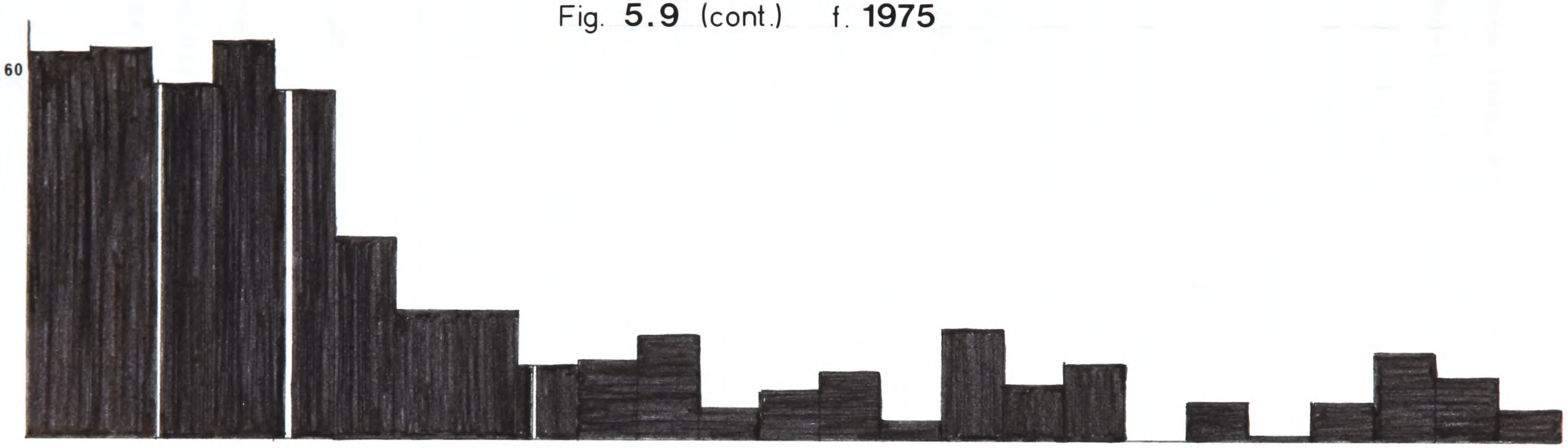
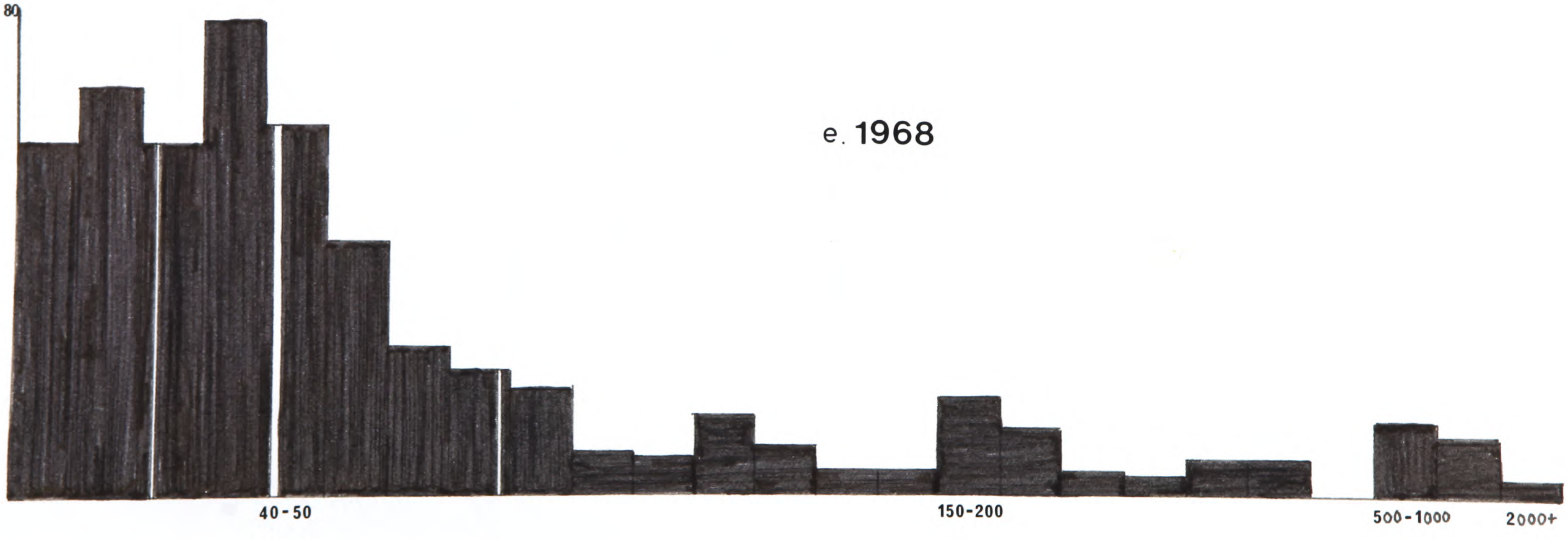


Fig. **5.9** (cont.) f. **1975**



e. **1968**



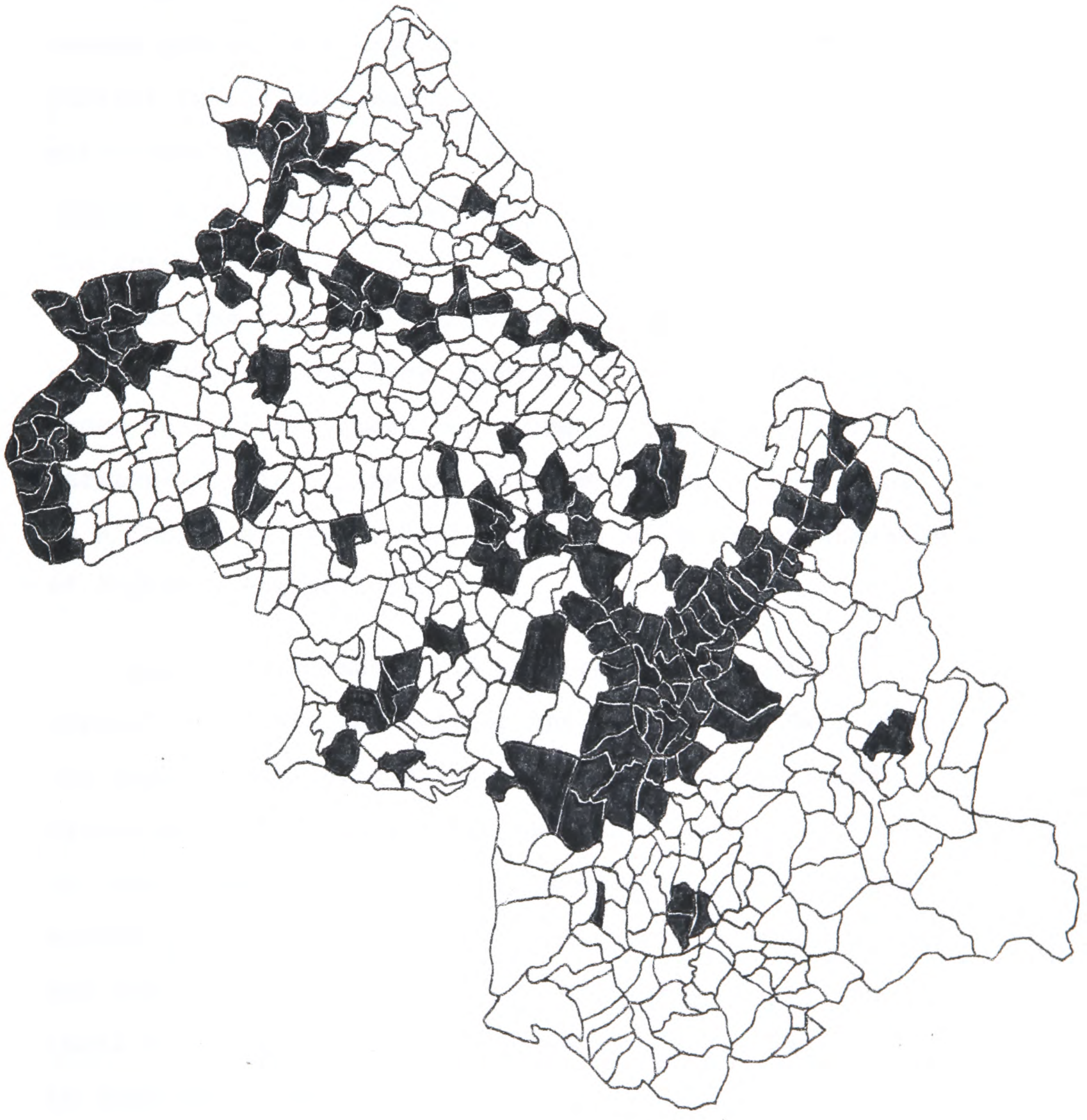
more rural areas, particularly from the High Alps and the Bas-Dauphiné. Thus from a situation of relatively high and uniform densities in 1891, there has been an increasing polarisation of population away from areas of difficulty, to more favoured districts.

This impression is confirmed by reference to the frequency diagrams of population density (Figs. 5.9a to f). In 1891 a quarter of the communes had a density of under 40 persons per km² but by 1975 a quarter had densities of 20 persons or less. At the other end of the scale in 1891 only 5 communes had a density of over 500 persons, but by 1975 there were 29. Similarly prewar the modal class for densities was between 40 and 50, but postwar fell to 30-40 which by 1975 contained only 1 more observation than the 10-20 class, and 2 more than the 0-10 class. Thus there has occurred a considerable polarisation of population distribution into 'empty' areas, and areas of concentration over the period 1891-1975. The concentration has occurred primarily post-war while the loss of population from the higher and more remote communes occurred pre-1921 and continued later.

5.3a. Communes growing in population

The communes which have gained population 1891-1975 are presented in Fig.5.10. As expected, these consist mainly of the communes of the Grésivaudan and Lower Drac, the communes of the Rhône Valley, and some of the larger

Fig. **5.10** Communes which have grown in population **1891 - 1975**



towns, cantonal capitals, industrial centres and ski-reorts of the Bas-Dauphiné and Alps.

Very few communes gained population in each inter-censal period (not even Grenoble itself), most gaining fastest in the post-war period. However, some communes which have grown overall, had the majority of their expansion pre-1946. These are shown in Fig. 5.11, and the graphs of their growth in Fig. 5.12. Included in these is the town of La Mure, which experienced some growth post-war but loss since 1962. The communes are those which experienced early industrial development particularly in mining and metal working. Charavines is a former watering place and spa, situated at the lake of Paladru, now polluted.

Many more communes did not begin to experience population growth until after the First World War, when the departmental population reached its lowest point. After this nadir, growth was spasmodic until 1946, but was obviously concentrated in particular areas, notably around Grenoble and Vienne. Those communes where growth has continued since 1921 are shown in Fig. 5.13, and those with chiefly post-1946 growth in Fig. 5.14. It is noticeable that the earlier growth occurred in the nearest suburbs to the major cities, and later growth in the more distant suburbs, as well as ski resorts and some larger market towns, such as Morestel, and St. Jean

Fig. 5.11 Communes growing mainly pre - 1946



Fig. **5.12** Population growth of communes growing pre - **1946**

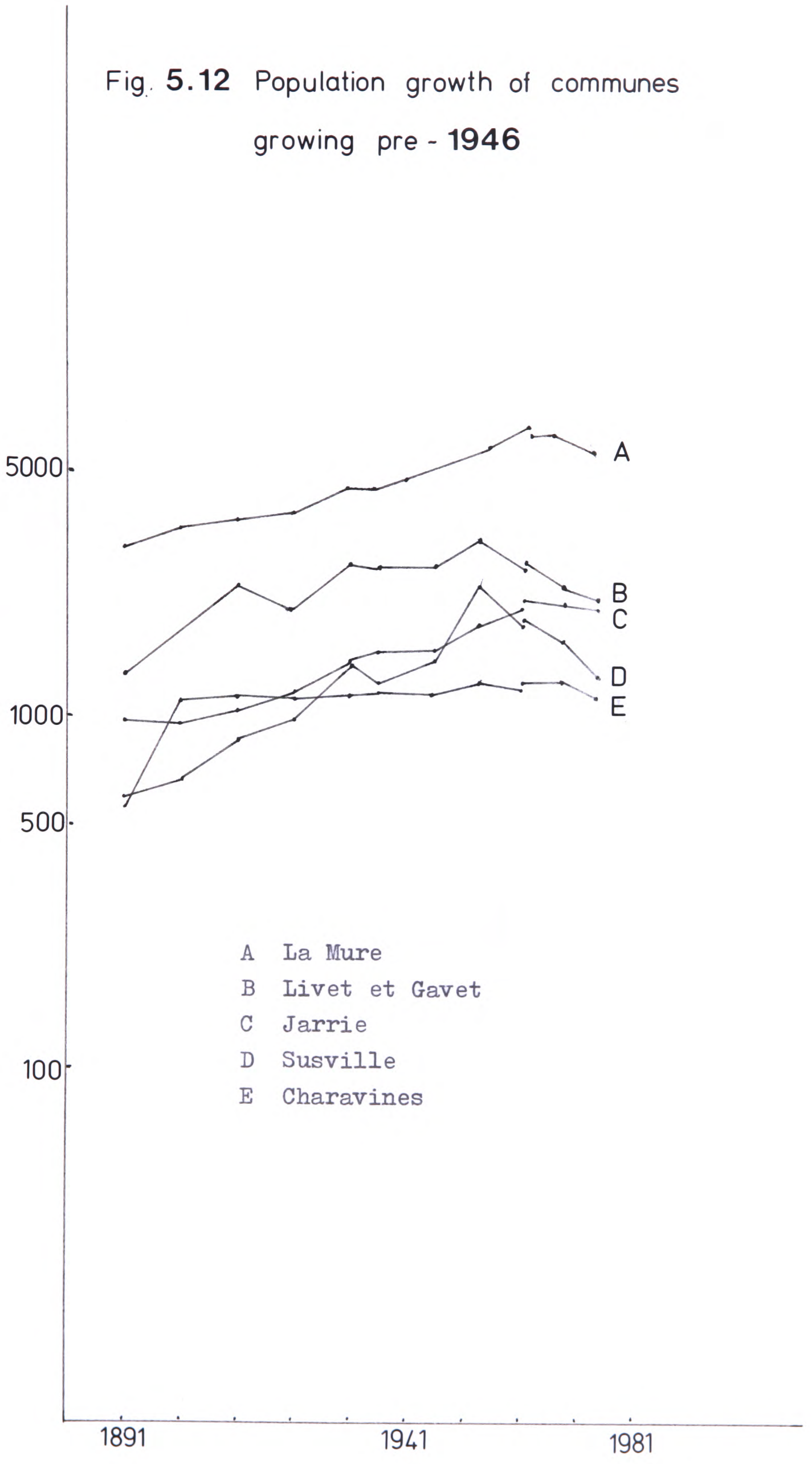


Fig. 5.13 Communes growing mainly post - 1918

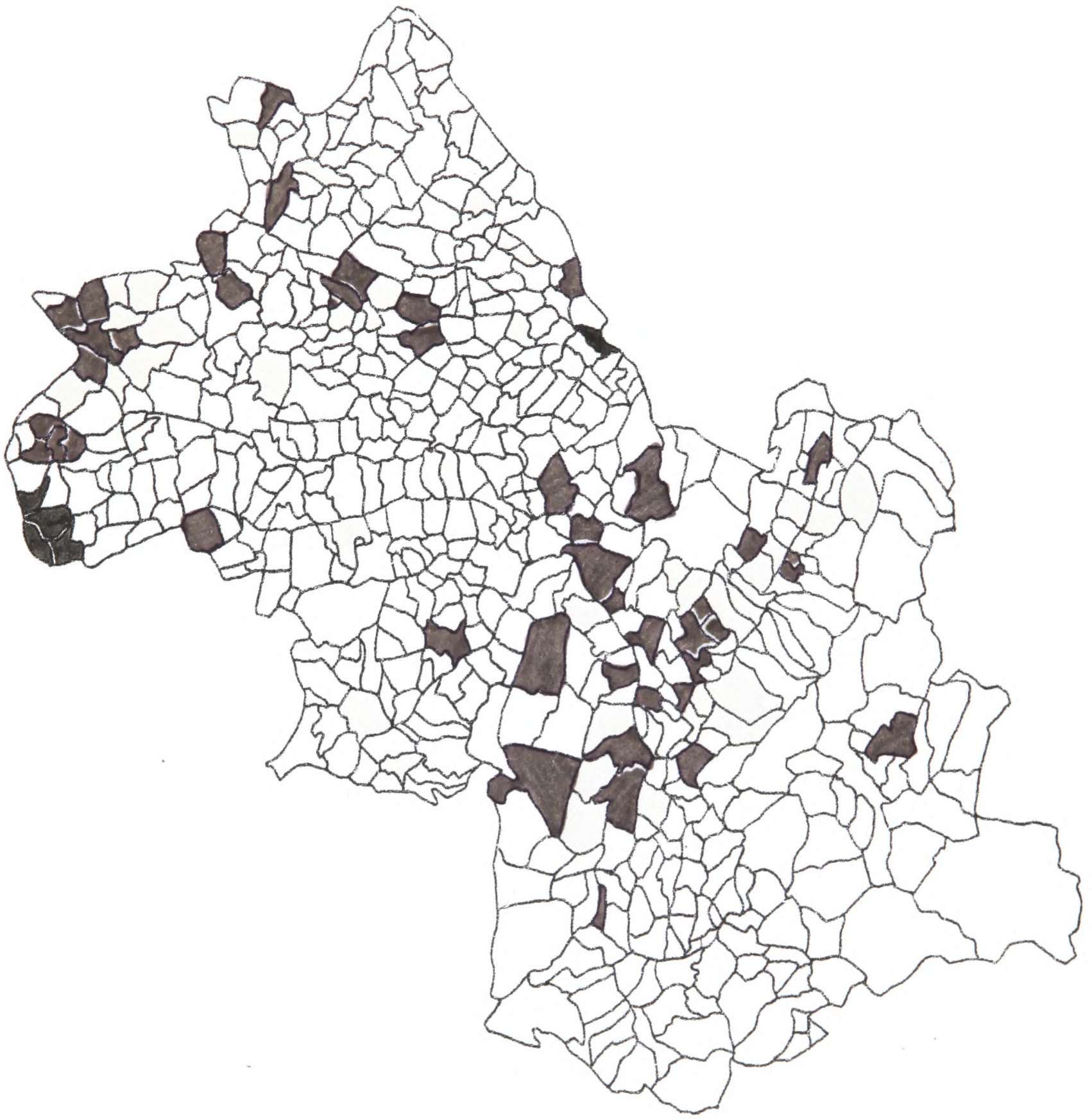
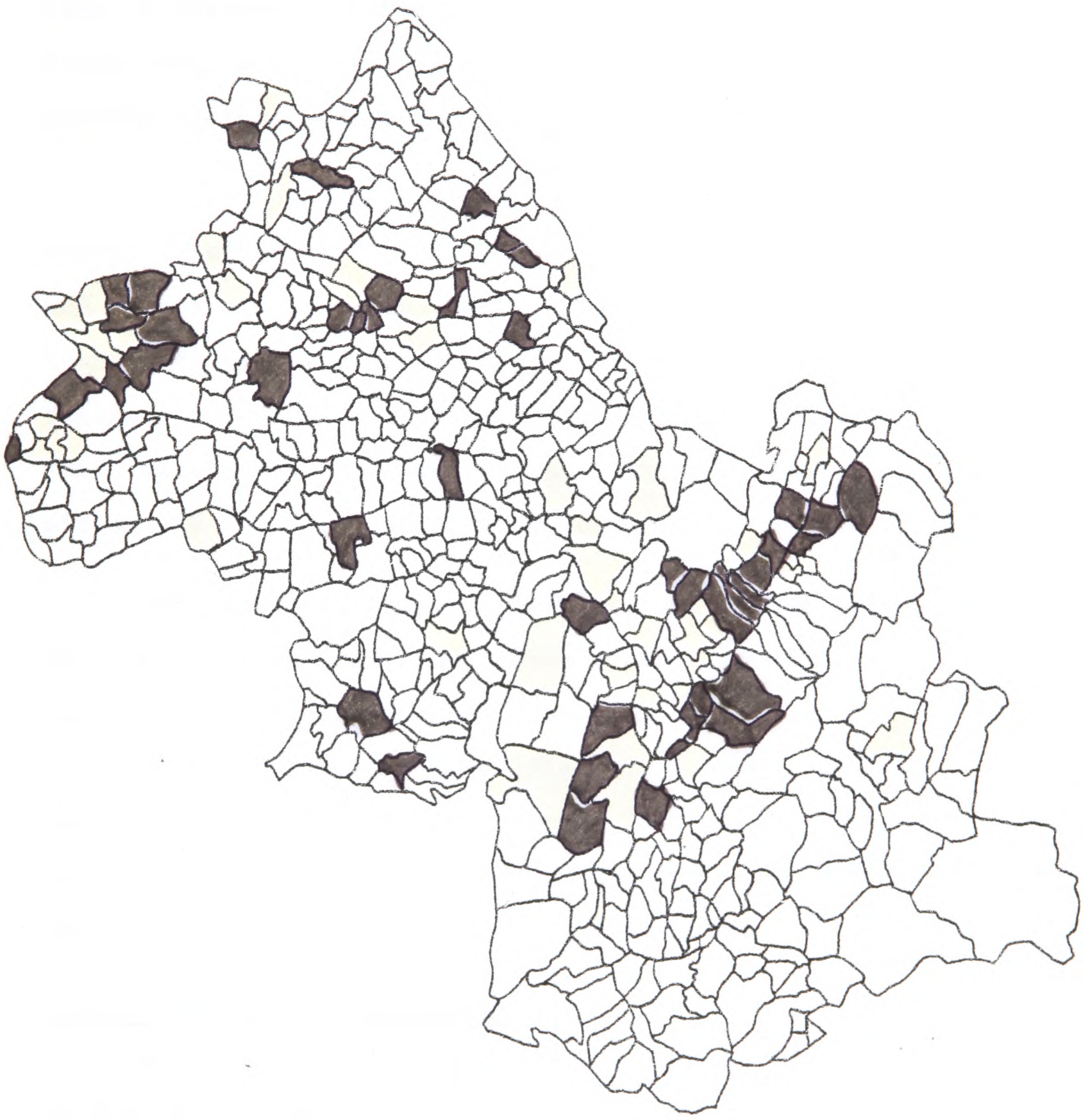


Fig. 5.14 Communes growing mainly post - 1946



de Bournay. The pattern of growth of suburbs around Grenoble and Vienne may be traced from Figs. 5.15 and 5.16. The pace of growth around the Grenoble agglomeration is noticeably quicker than around Vienne, particularly since 1962, when Grenoble was one of the four fastest-growing agglomerations in France.

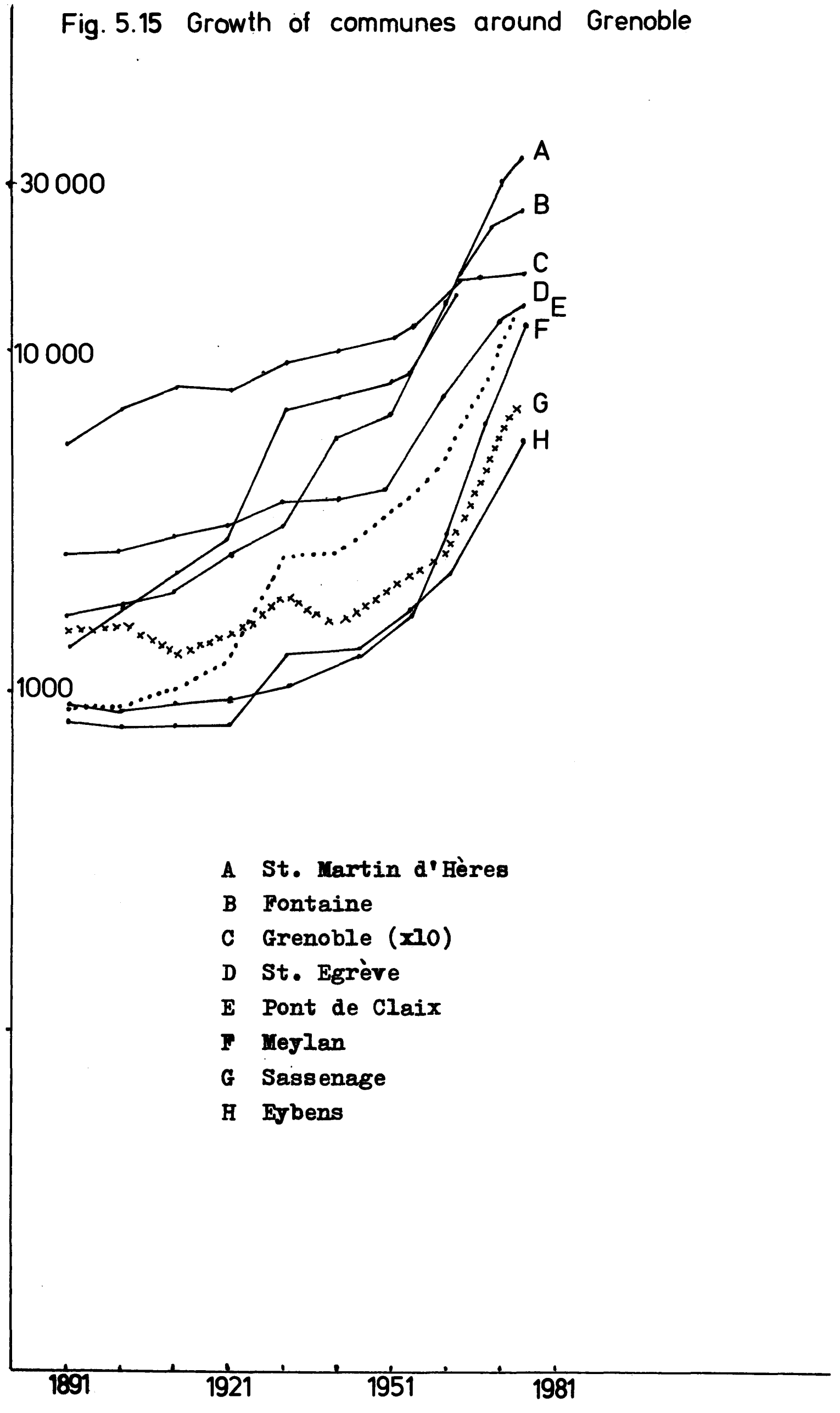
Some communes have experienced growth at all times except interwar. Figs. 5.17 and 5.18 show the distribution and growth of these communes: they are primarily small towns with historic traditions (e.g. Crémieu - military, Domène - industrial, la Tour du Pin - administrative) which maintained their growth until the first war, and since 1946 have been undergoing resurgence.

Those communes showing growth in all phases (pre World War I, interwar, and post-war) consist of small towns showing steady increase, and Grenoble suburbs exhibiting spectacular rises (Fig.5.19). Small town growth is generally in the range of 1000 - 4000 from the period 1891 - 1975, while the urban/suburban expansion has been up to 10 times the 1891 population.

5.3b. Communes losing population

The communes which have lost population are shown in Fig. 5.10. They include most communes of the Alps and Pre-Alps with the exception of industrial centres and tourist resorts, and a high proportion of smaller rural communes of the Bas-Dauphiné. Graphs of population change

Fig. 5.15 Growth of communes around Grenoble



A St. Martin d'Hères
B Fontaine
C Grenoble (x10)
D St. Egrève
E Pont de Claix
F Meylan
G Sassenage
H Eybens

Fig. **5.16** Growth of communes around Vienne

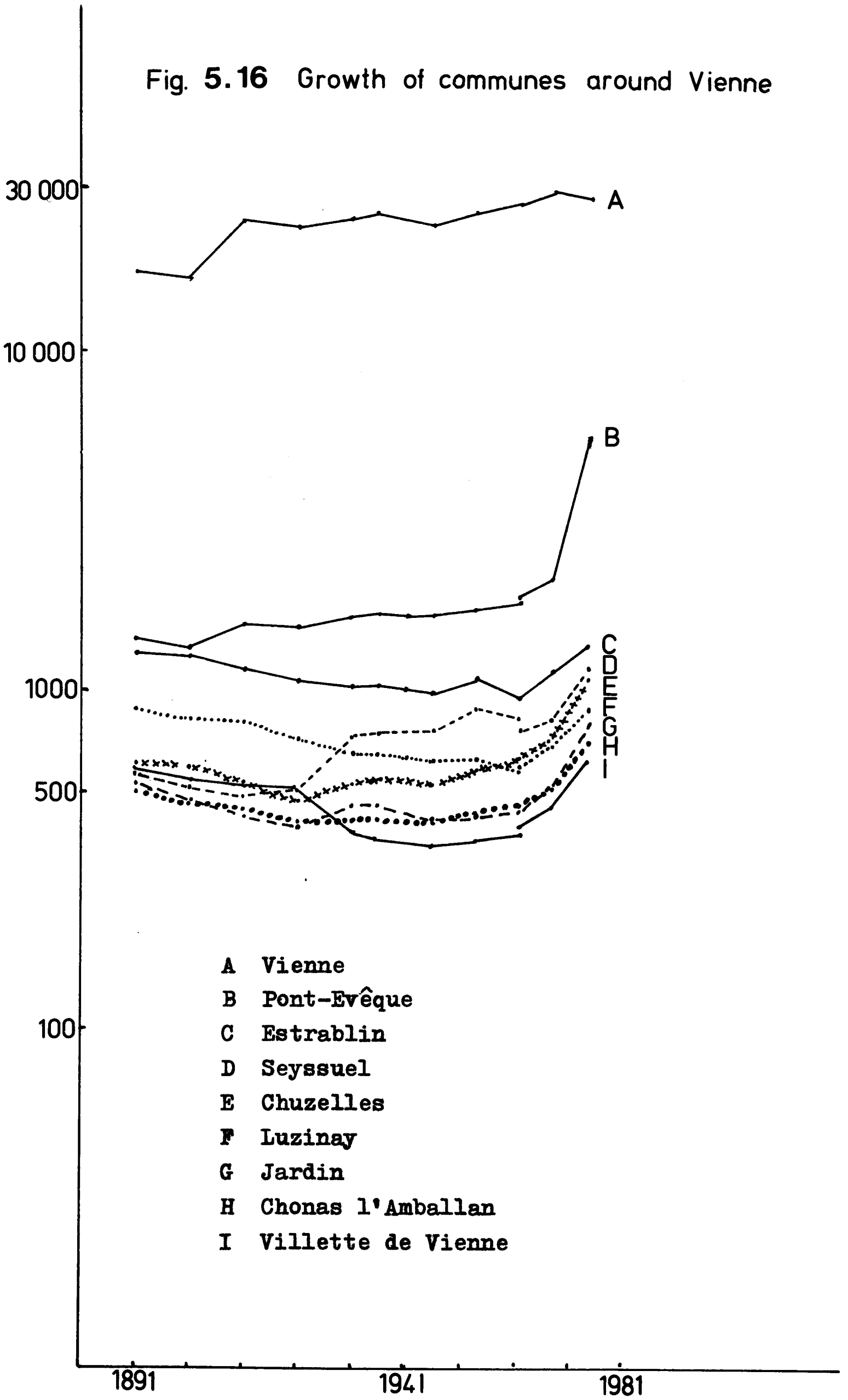


Fig. 5.17 Communes growing throughout the period except interwar

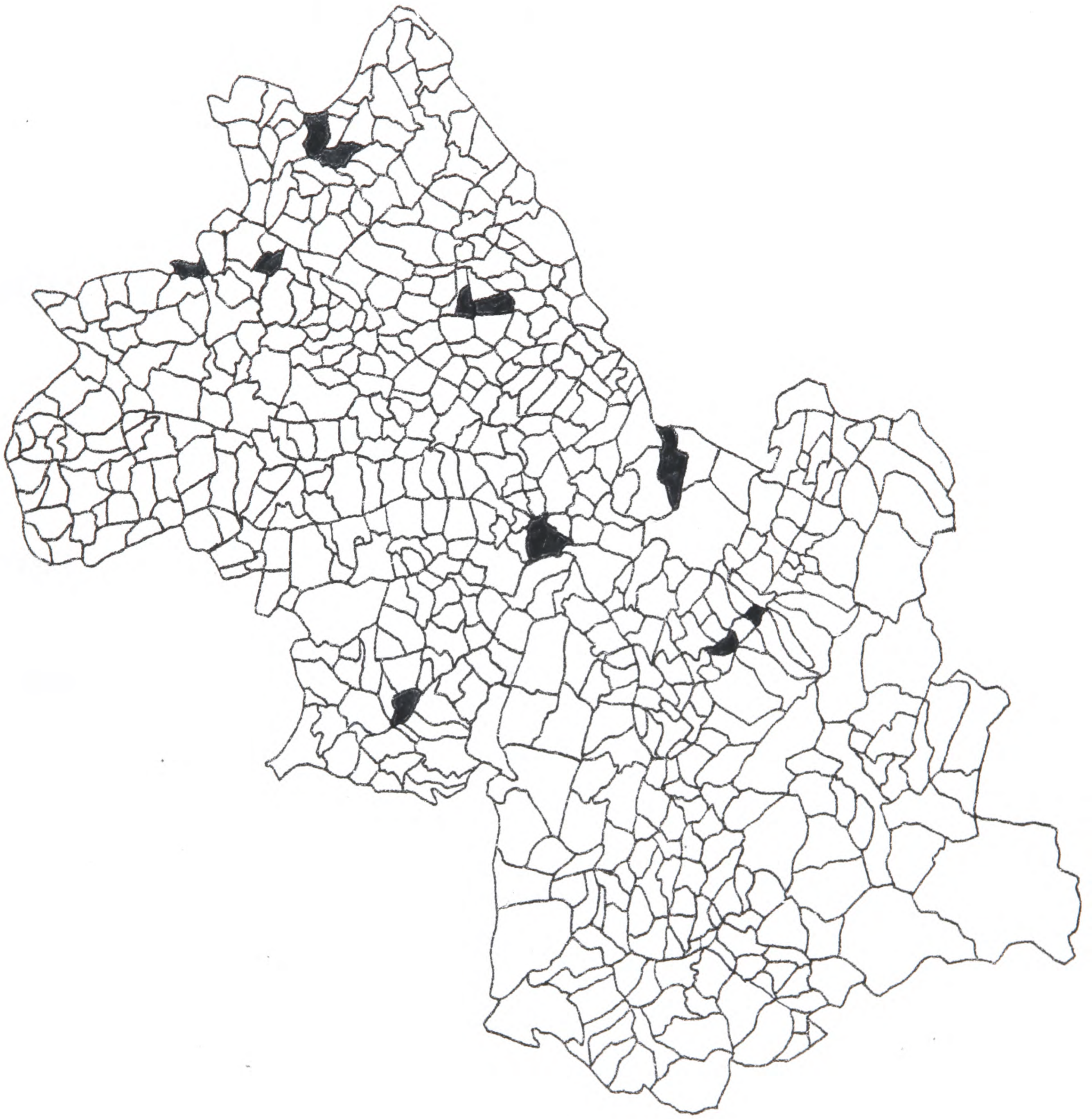
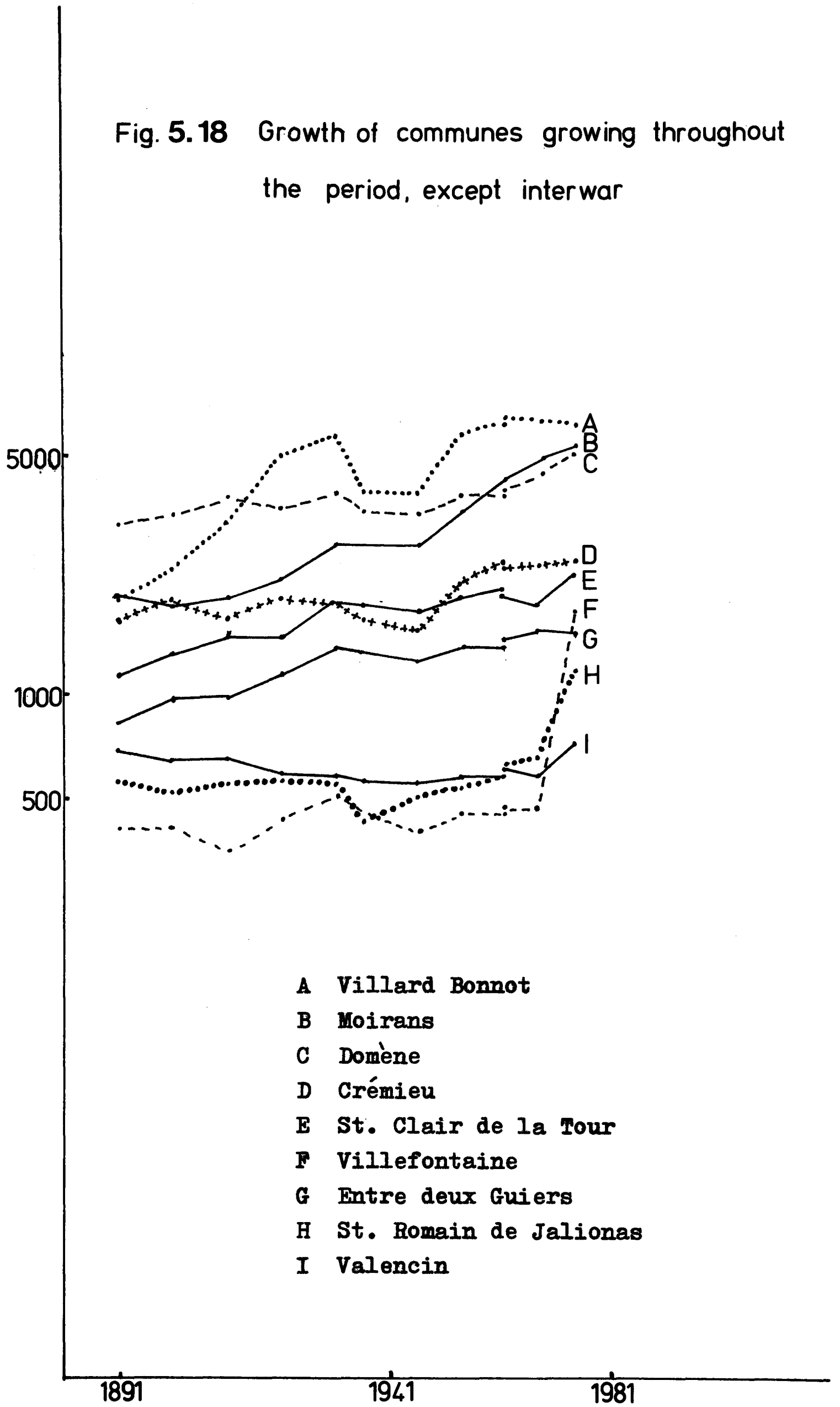
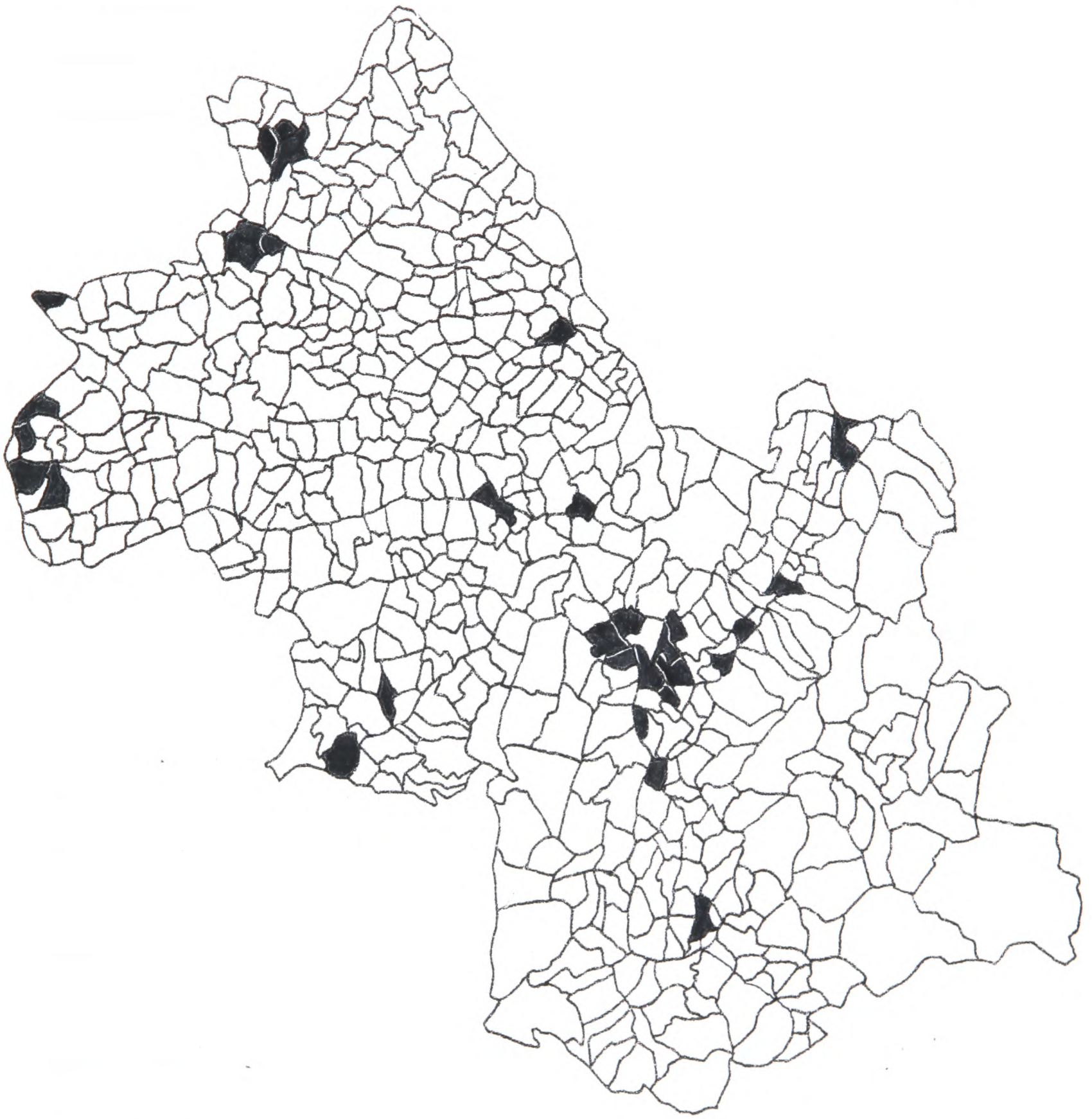


Fig. **5.18** Growth of communes growing throughout the period, except interwar



A Villard Bonnot
B Moirans
C Domène
D Crémieu
E St. Clair de la Tour
F Villefontaine
G Entre deux Guiers
H St. Romain de Jalionas
I Valencin

Fig. **5.19** Communes showing continuous growth



for a random selection of communes are presented in Fig. 5.20. The larger communes (often cantonal capitals) have undergone steady population decline with some phases of increase. The smaller communes with a population of approximately 200 in 1891 have, however, suffered catastrophic loss, particularly those communes in areas of greatest inaccessibility.

Those communes which have lost population over the whole period, but mostly pre 1921 are shown in Figs. 5.21 and 5.22. These communes lost population as did the department generally to 1921 but since that date have managed to curtail their losses. Fig. 5.22 shows their recent increase in population since 1962 and particularly since 1968, with the development of tourism and second homes. Those communes losing population until the second world war but recovering post-war (sometimes almost to their 1891 population level) are presented in Figs. 5.23 and 5.24. It is noticeable that there are two categories of communes which exhibit some evidence of recovery all located almost exclusively in the Bas-Dauphiné. Some have obvious explanations for their belated recovery of population loss, such as those communes around the new developments of industry and residential zones at L'Isle d'Abeau and Satolas. Others have benefited from the 'swash' effects of urbanisation in Lyon, Vienne and Grenoble, as dormitory and commuter settlements. The other communes may have benefited, in general, from a larger original population and more adequate provision of services.

A Mens

B Corps

C Valbonnais

D Valencogne

E La Cluze et Pâquier

F Belmont

G Château Bernard

H Cornillon en Trièves

I Valjouffrey

J Miribel Lanchâtre

K St. Christophe en Oisans

L Ste. Luce

M Villard Reculas

N Malleval

O Villard Reymond

Fig. **5.20** Communes losing population

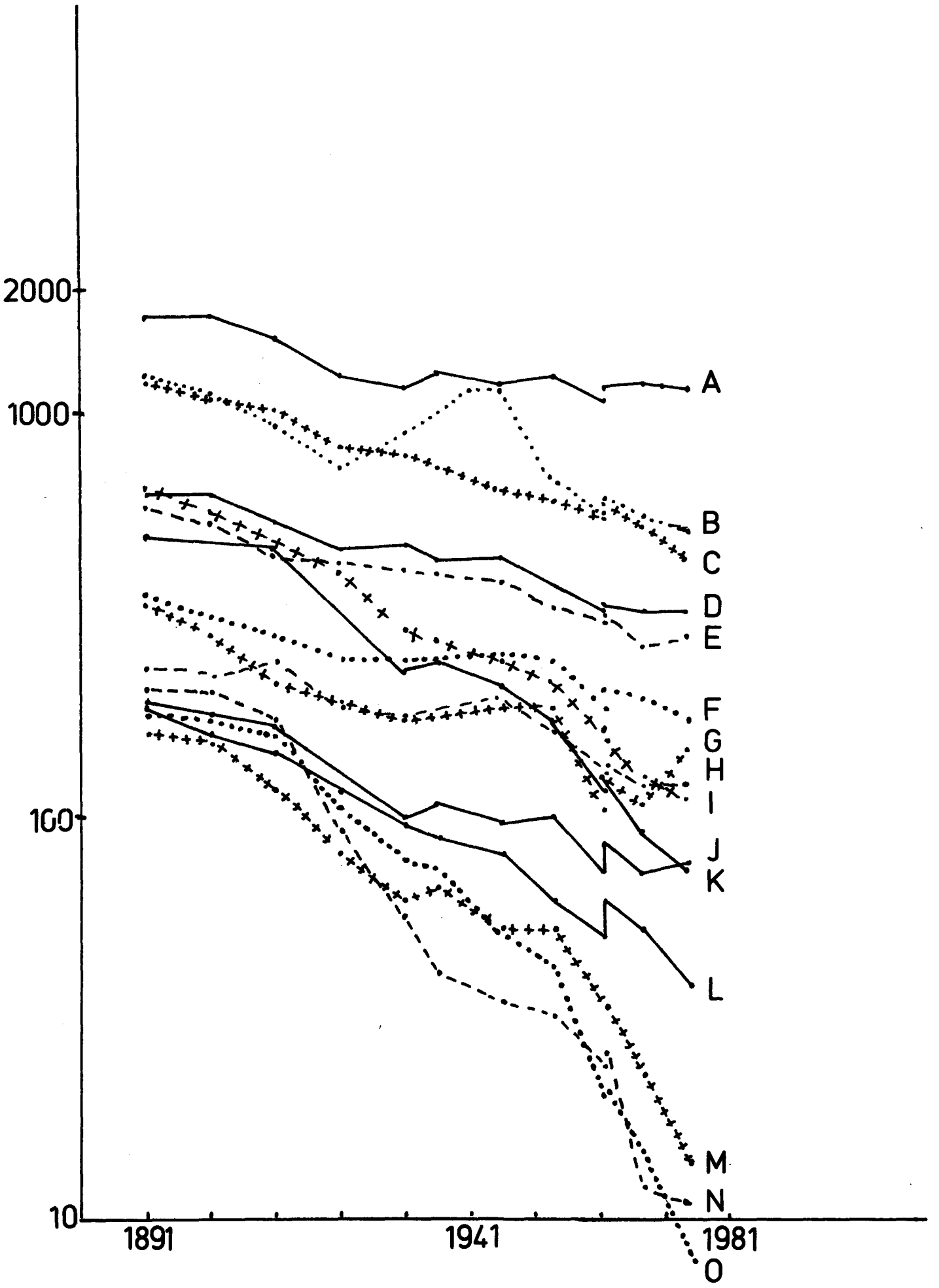


Fig. **5.21** Communes losing population mainly pre - **1914**

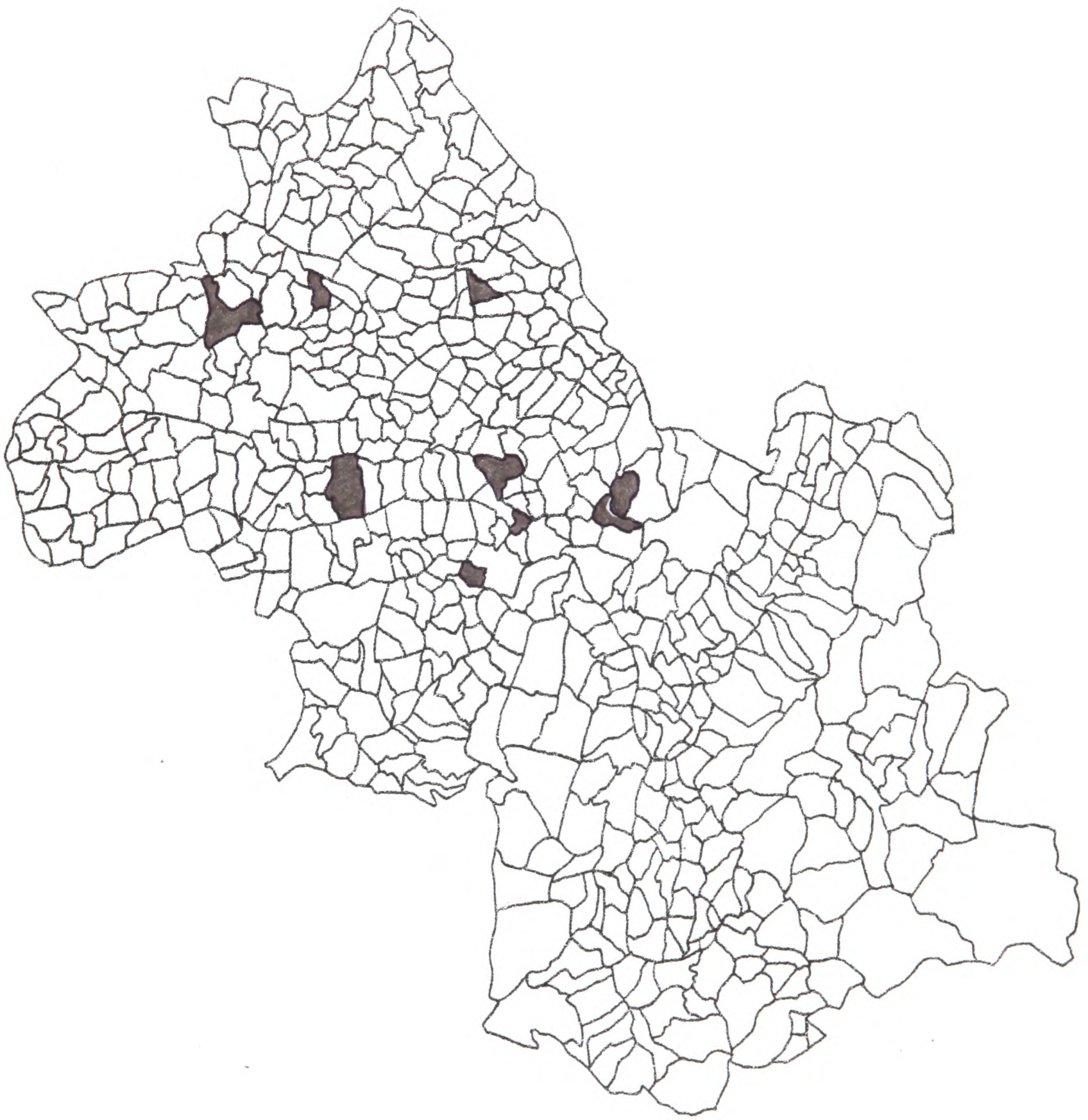


Fig. **5.22** Communes losing population mainly pre - **1914**

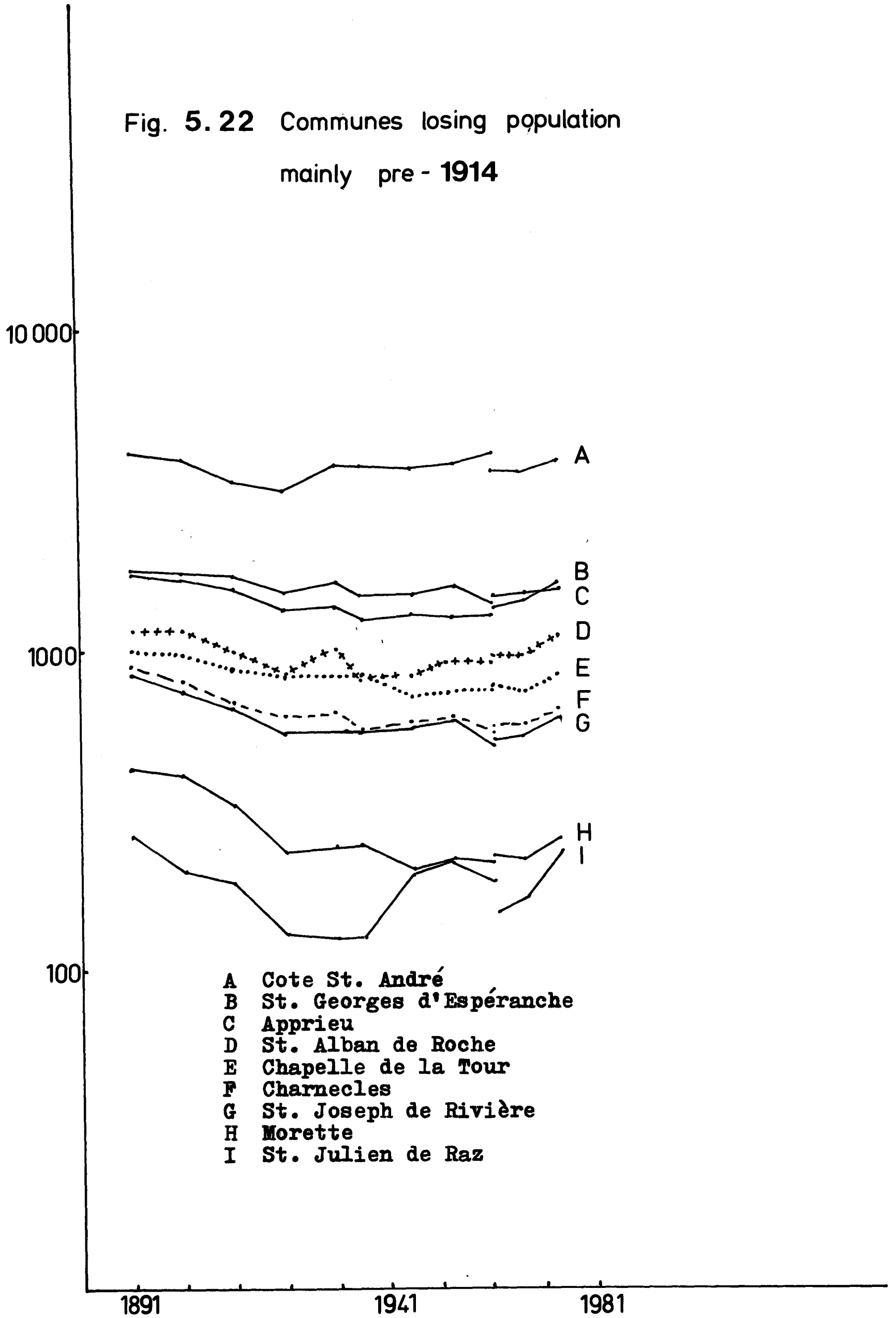


Fig. **5.23** Communes losing population, mainly pre - **1946**

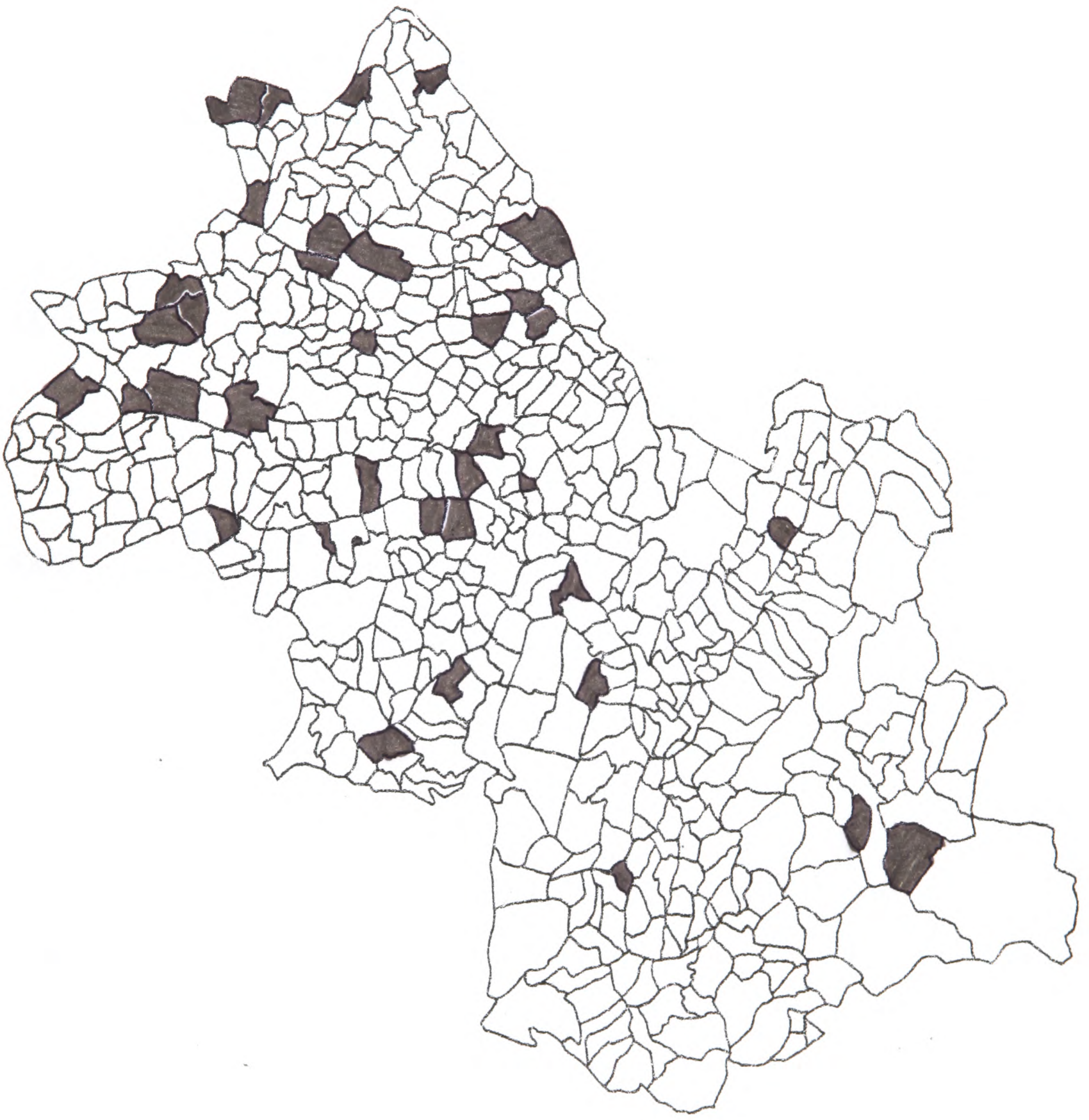
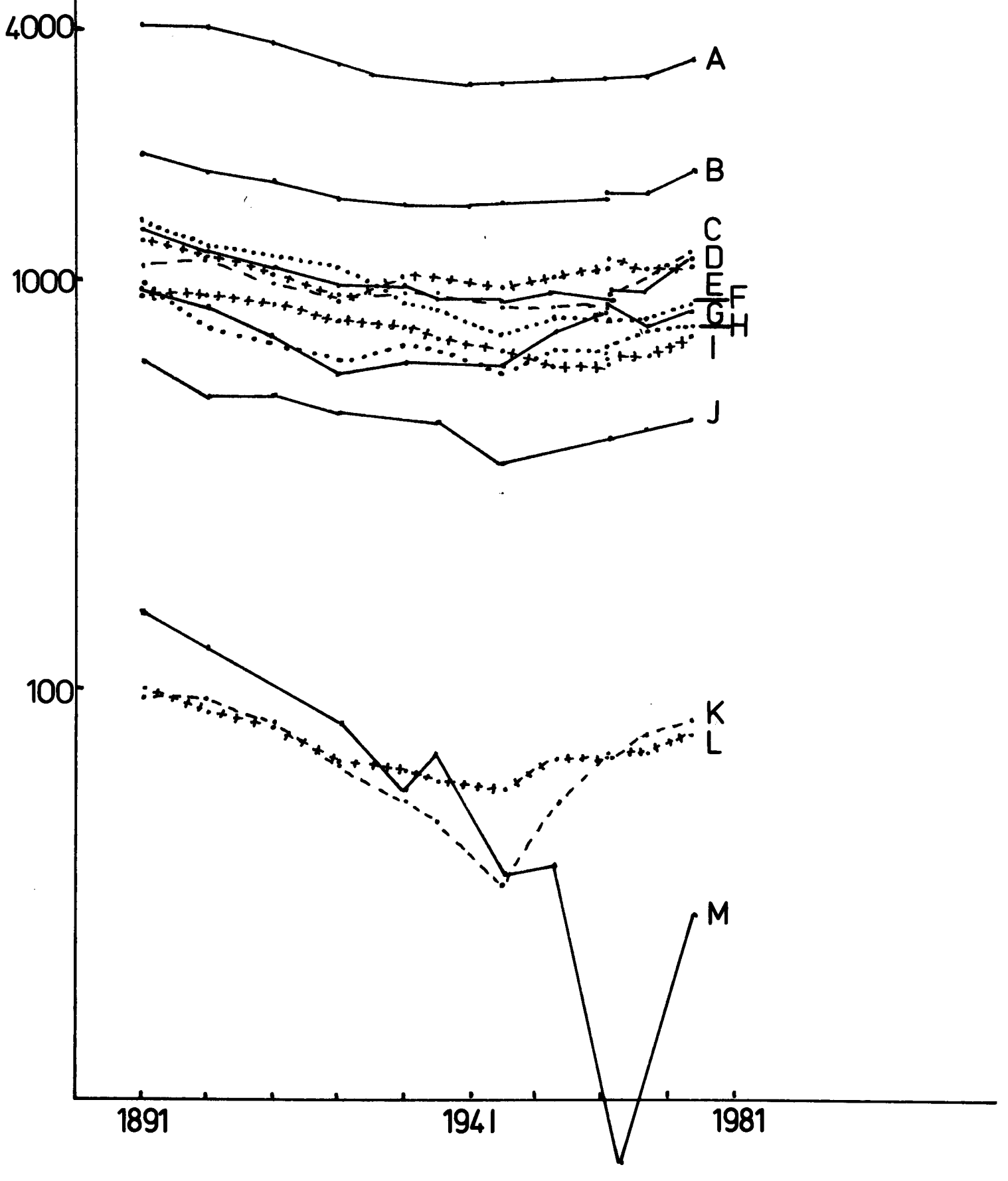


Fig. 5.24 Communes losing population mainly pre-1946

A Les Avenières
B St. Savin
C St. Romans
D St. Didier de la Tour
E Fitilieu
F Septême
G La Terrasse
H L'Isle d'Abeau
I Colombe
J Venosc
K La Murette (x 10)
L Bressieux
M Villard Notre Dame



This is borne out by the Table below relating population decline to categories of original population size:

Table 5.1. Percentage of communes (by category of population size in 1891) showing population decline

Size Category	% decline	total no. of communes
0 - 199	93.11%	29
200 - 499	82.37%	153
500 - 999	77.68%	206
1000 - 1999	56.19%	105
2000 - 4999	42.42%	23
5000+	0	4
		530*

*The communes of Serpaize and Seyssinet-Pariset were not in existence in 1891 and have been excluded from this table.

There is a consistent and progressive relationship between population size and loss of population. In communes with less than 200 people in 1891 only two had grown in population by 1975. Indeed for all communes of under 2000 people in 1891 more than half have since lost population. It is clear that the larger rural communes are more capable of retaining population than the smaller ones, a larger population being more able to retain a balanced age structure and fertility, and with more facilities has more services to retain or even attract population. It is noticeable that the smaller communes which have increased their population have benefited from proximity to urban areas, (Johnston 1970, Privat 1973)

e.g. Rybens with a population of 822 in 1891 boasted a population of nearly five and a half thousand in 1975, whereas less accessible communes of comparable size almost invariably lost population if there developed no industry or tourism. (e.g. Notre Dame de Vaux 1891:892 1975:313).

Of the urban communes (2000+) more than half have gained population, while the very largest (all four in fact over 10,000) have all increased, particularly the city of Grenoble (see Table 5.2).

Table 5.2. Growth of the four largest communes in Isere 1891 - 1975

	1891	1975
Bourjoin-Jallieu	11,553*	21,328
Grenoble	52,389	166,733
Vienne	13,607*	27,776
Voiron	11,604	19,409

*Bourjoin-Jallieu in 1891 were two separate communes, the totals of which have been amalgamated. Similarly Vienne consisted of Vienne Nord and Vienne Sud.

5.4 MIGRATION IN ISERE

Thus far we have examined rates of absolute population change in the department as a whole and in different areas within the department. Population change is, of course, attributable to two main factors, firstly natural growth (the balance between births and deaths) and secondly mobility of population, or migration. This thesis is concerned primarily with the examination of mobility, but it is necessary to examine briefly the contribution of natural change to population change.

Table 5.3. Isère - Natural growth of population: rates per 1000

1886 - 91	- 6.0
1926 - 31	- 4.0
1954 - 62	5.7
1962 - 68	5.2
1968 - 75	5.5

Table 5.3 presents the rates of natural growth for selected intercensal periods. From 1891 to 1931 rates of natural growth were negative; deaths exceeded births. It will be recalled (Fig. 5.7) that the total population of Isère was declining until 1921. The natural decline however continued after the population began to increase. The only explanation for this is that in migration to Isère commenced before fertility rose. The post war period has shown a consistent excess of natality over mortality, yet this does not sufficiently account for

the marked rise in total population experienced, particularly in the periods 1954-62 and 1962-68.

The importance of mobility in total population change is seen from Table 5.4. In 1891 emigration was a more potent factor than natural decline.

Table 5.4. Isère: migration rates 1891-1975

1886 - 91	-10.9
1926 - 31	4.8
1954 - 62	10.2
1962 - 68	8.4
1968 - 75	6.7

In 1931 immigration alone increased the total population, and postwar the migration component has accounted for the larger proportion of total population change. Population migration from outside the department and from abroad are both represented in the statistics given above. The next section of this thesis examines the origins of and the numbers involved in this movement from outside Isère, supplementing the major characteristics of internal migration within the whole of France indicated in Chapter 1.

5.4(a). Immigration from abroad

The growth of the foreign population of Isère is a phenomenon of the last hundred years (de Mauroy 1976a, 1976b, 1977). In 1891 the foreign born component of the population made up only 1.5% of the total, somewhat

lower than the national average. The distribution of the national groups within France is clearly a function of distance from source; thus there was at this time a concentration of Belgians in the Northern departments, of Spanish in the Pyrenees and Italians in the South-East. The Italians accounted for the majority of the foreign-born population in Isère, in 1891 6992 of 8578 (81.5%).[1]

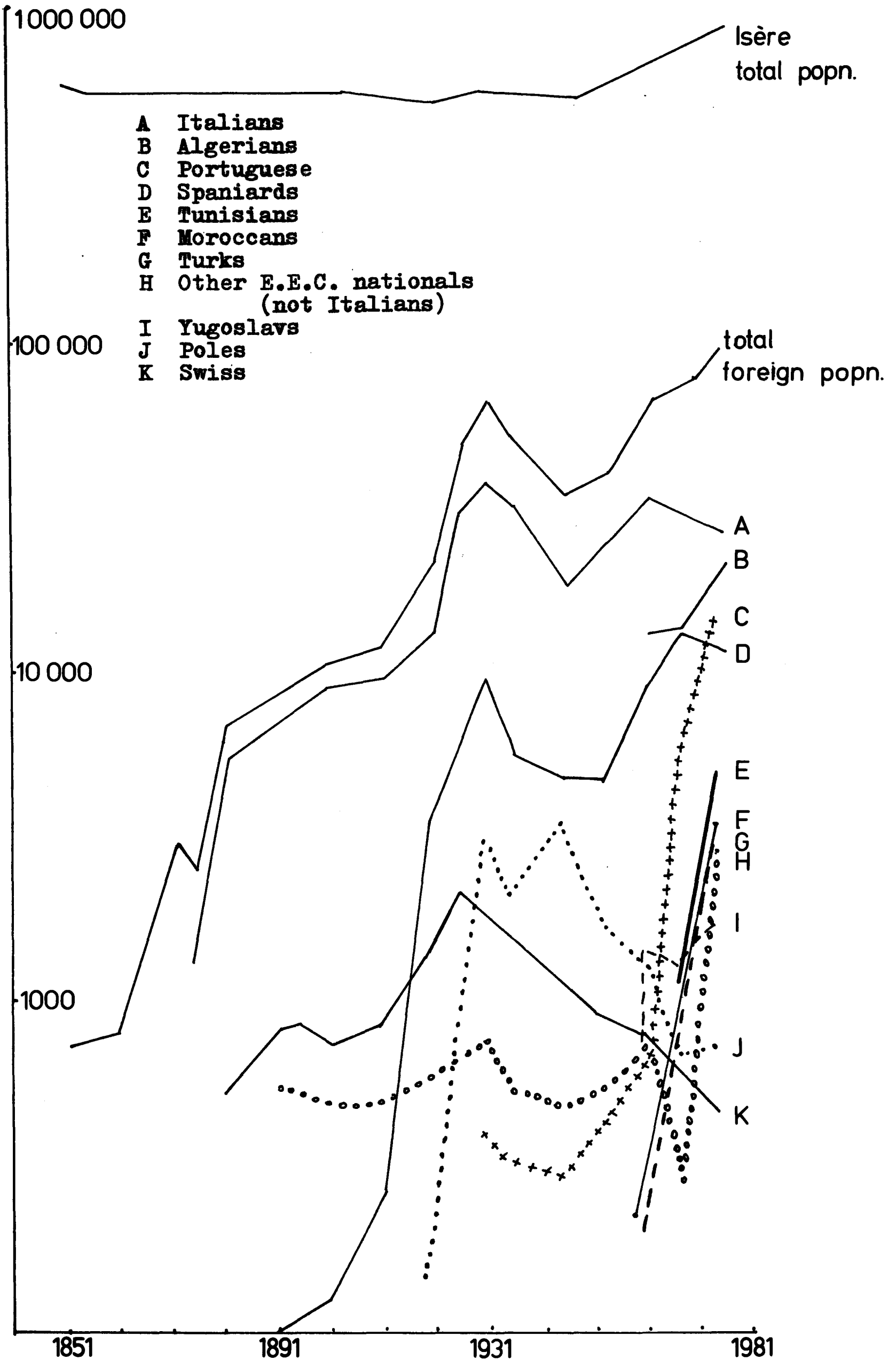
The growth of foreign populations in Isère from 1851-1975 is shown in Fig. 5.25. It can be seen that the Italian population continued to account for the bulk of the foreign population until the 1930s, although by this time there were also substantial numbers of Spaniards. The Italian population declined in the Second World War period with encouragement by Mussolini to return home. By this time also many second generation Italians were opting for French naturalisation.

Since the war there have been new waves of foreign immigration, and the cessation of older phases of immigration. Immigration of Italians practically ceased in the 1950s, and of Spaniards after 1967; Portuguese immigration reached its peak in 1971, and Algerian in-movement was stopped in September 1973. The most recent increases in foreign population have been of Moroccans and Tunisians, and on a less dramatic scale of Turks and Yugoslavs.

---

[1] The total population of Isère in 1891 was 561,243 of whom 401 were naturalised French.

Fig. 5.25 Growth of foreign populations in Isère 1851-1975



In July 1974 foreign immigration was provisionally suspended with the exception of EEC members, families of workers who had already been resident in France for a certain length of time, and for workers with exceptional qualifications. France also accepted certain foreign refugees. The reasons for this suspension of immigration were not hard to find: the traditional policy of immigration had been for economic reasons (attraction of a labour force) and for supplementary demographic reasons. French fertility in the 1940s and 1950s had lessened the need for demographic increase, while in the 1960s and 1970s the economic situation deteriorated as fewer jobs were available (Malabouche 1976).

Despite the halt to foreign immigration the number of foreigners has continued to grow in France as a whole and in Isère.[1] In the 1970s the foreign population of Isère numbered 90,345, equivalent to 10.5% of the population. Moreover it is certain from comparisons of the census returns and those held by the Prefécture that the census under estimates almost all categories of foreign workers (de Mauroy 1976), while some Prefécture results may be overestimates. Figures quoted must therefore be taken as orders of magnitude rather than absolute numbers.

---

[1] Slight decline in 1976 by 0.5% (de Mauroy 1977).

Italian nationals are still the largest foreign minority in Isère as in Savoie and Haute-Savoie (both bordering Italy). The reduction in numbers from 1962 to 1975 has been caused by a large number of naturalisations (Italians accounted for the greatest proportion - almost a third - of all French naturalisations until 1972 when the Spanish overtook this rate). The entry of permanent workers from 1968 - 1975 was of the order of 300 per year, as this movement was not affected by the ban on foreign immigration because Italy is part of the EEC.

The Algerian population makes up almost a quarter of the department's foreign population, and in France overall it is the largest minority group. The rapid growth (1968-75) of the Algerian population is due to family immigration, high fertility levels and the attraction of the Rhône-Alpes region in a period of generally high unemployment. The demographic structure of the Algerian population is unbalanced with the highest proportion of young single men living alone of any of the foreign minorities, and also the highest number of children per female. The halt to immigration will assist the accomplishment of a balanced demographic structure, but this will take several years, even decades.

The Portuguese immigration has been the most recent of foreign movements to France. (In 1961 there were less

than 50,000 in the whole of France). From 1968 to 1975 the Portuguese population more than doubled; however immigration in Isère as with the rest of the Rhône-Alpes has been somewhat slowed by the presence of a large Algerian population with whom there is said to be rivalry for the same type of employment. The difference between the Portuguese and the Italians and Algerians is that the Portuguese are a young, recent and family-orientated group, while the Italians are an older more established community, and the Algerians are young but demographically disorientated.

The Spaniards, like the Italians, represent a long established movement, still with a fraction of political refugees (5 - 6%). The recent reduction in the Spanish population has been due, as indicated above, to a high proportion of naturalisations, and to a slowing of immigration in the late '60s and 70s. However, seasonal migration still remains at a high level accounting for over 50% of all seasonal movements. The demographic structure is reasonably balanced although with more men than women, and a lower proportion of aged populations than the Italians.

On a smaller scale are the recent immigrations of Tunisians and Moroccans, whose numbers have more than tripled in the last intercensal period. A rapid growth in numbers in 1973 is accounted for by the regularisation

of illegal Tunisian immigrants. The demographic structure is unbalanced as for the Algerian population, with a high proportion of single men, and few old people.

Descending further in the importance of the migrations are the recent movements of Turks and Yugoslavs. These comprise certain numbers of political refugees but in the main it is a workforce attracted by greater economic opportunities than in their home country. As such the demographic structure is unbalanced but is characterised by immigration of families following rapidly after establishment of the breadwinner. The decline of the Turkish population in the period 1962-68 has been attributed to the greater attraction of working in the Federal Republic of Germany at this time (de Mauroy 1976).

The Swiss and the Poles can hardly be counted as labour movements. The reduction in the Swiss population is due to the population ageing and naturalisations. The Poles represent an old movement; immigration has long since ceased, and assimilation is well advanced. The population is aged with very few children (less than 4% under 16 years of age). The proportion of refugees is still between 11 and 12% of the population.

Movements of EEC nationals (except Italy) have been relatively unimportant, with the highest proportion from Germany and Great Britain.

Thus the foreign immigrants form a substantial minority of the population, but are by no means homogeneous in their demographic and economic characteristics. The oldest migrants, and those who are best assimilated are the Poles, Italians and Spaniards. The newer migrants from Portugal, Turkey and the Maghreb are of two types: firstly, the single workers staying for a relatively short time, ensuring (before 1974) a 'rotation' between France and the home country. Secondly are the workers who bring their families and who have therefore a more stable demographic background.

The foreigners have moved predominantly to the main towns and particularly to the industrialised areas in and around the Grenoble agglomeration. Their areas of destination within the city will be examined in more detail in Chapters 7 and 8.

5.4(b) Migration relationships with the rest of France

Internal migration began to make a positive contribution to the growth of the population of Isère in the 1920s, before natural growth replaced natural decline. Before this Isère was, in the main, a department contributing to the 'exode rurale'; but also from 1891 appeared as a subsidiary destination within the Rhône-Alpes components, until becoming the focus for migration flows of national importance in 1954-62. The continued attraction of Isère and the Rhône-Alpes has been summarised

by Martin (1971). The changing spatial pattern of migration to and from Isère clarifies this general picture. The technique used here to analyse the pattern is that misleadingly termed 'migration velocity' used by Fielding (1971) and by Bather (1973). It is merely a standardisation of the absolute numbers of migrants by the product of the populations of origin and destination areas, and may be stated thus:

$$Mv_{i \to j} = \frac{M_{i \to j}}{P_i . P_j}$$

where:

$Mv_{i \to j}$ = Migration velocity from i to j
$Mi \to j$ = Migration flow from i to j
$P_i . P_j$ = Product of populations at i and j

The benefit of this measure is that it removes the effect of population size on the numbers of migrations. Thus factors other than population size are emphasized. In particular if the 'velocities' are mapped and 'isopleths' of equal value interpolated, there is immediate visual evidence of the distance factor. If distance was the only factor influencing migration streams one would expect to find a pattern of concentric rings of equal velocity. Any deviation from this regular pattern, together with change over time, may be attributable to other factors.

The migration velocity maps derived for Isère over the period 1891-1968 provide a good broad picture of the changing structure of migration relationships over time; and illustrate the changing importance of distance, the rôle of Paris and other competing migration centres, and some interesting deviations from the theoretical pattern. It must be remembered that much of the data is drawn from a sample only and that random errors increase as the absolute numbers recorded decrease. For the 1962-68 census (1 in 4 coverage) the I.N.S.E.E. suggest the following margins of error:

Table 5.5. Margins of error 1968 census

Number of migrants	Margin of error 95% level
1,000,000	996,000 - 1,004,000
100,000	98,700 - 101,300
10,000	9,600 - 10,400
1,000	870 - 1,130
100	60 - 140

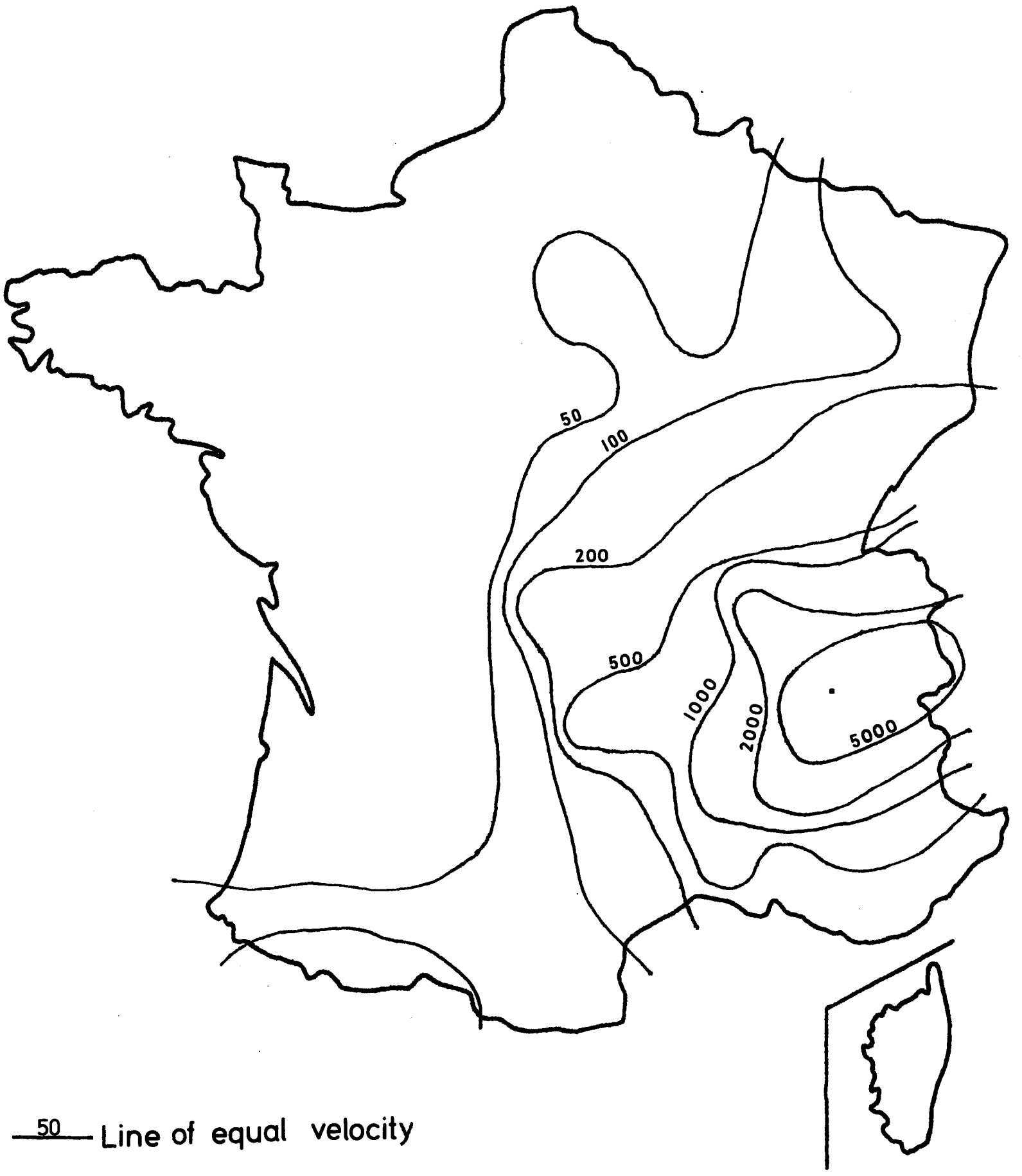
The maps of migration velocity therefore represent orders of magnitude rather than exact numbers. In-migration in 1891 (Fig. 5.26a) shows a pronounced local in-movement from the neighbouring rural departments of Savoie, Drôme and Hautes-Alpes and also from the urban-industrial department of Rhône. Scarcely any further distant but with lower levels of immigration are the departments of Ain, Ardèche, Loire and Haute-Savoie.

This may be explained by alternative foci for emigrants; Loire, Ain and Ardèche sending principally to Rhône and Ardèche also to Drôme, while Haute-Savoie sends to Rhône but also direct to Paris. The concentric rings become distended around parts of the Massif Central particularly the Cantal and the Creuse, then undergoing large-scale emigration. Below the value of 100, velocities are generally low with the exception of the Pyreanean corridor and the city of Paris. This movement from Paris to Isère may be accounted for at least in part by return migrations and seasonal movements.

The out-migration velocities for 1891 (Fig. 5.26b) show a North-South orientation rather than the 'pot-bellied' isopleths of in-migration. This is accentuated by the location of the major destination, the department of Rhône with the metropolitan centre of Lyon. Thus Isère at this time appears to function as a staging post: it draws in migrants from the rural Savoy and higher Alps but in turn contributes to the wider system dominated by Lyon.

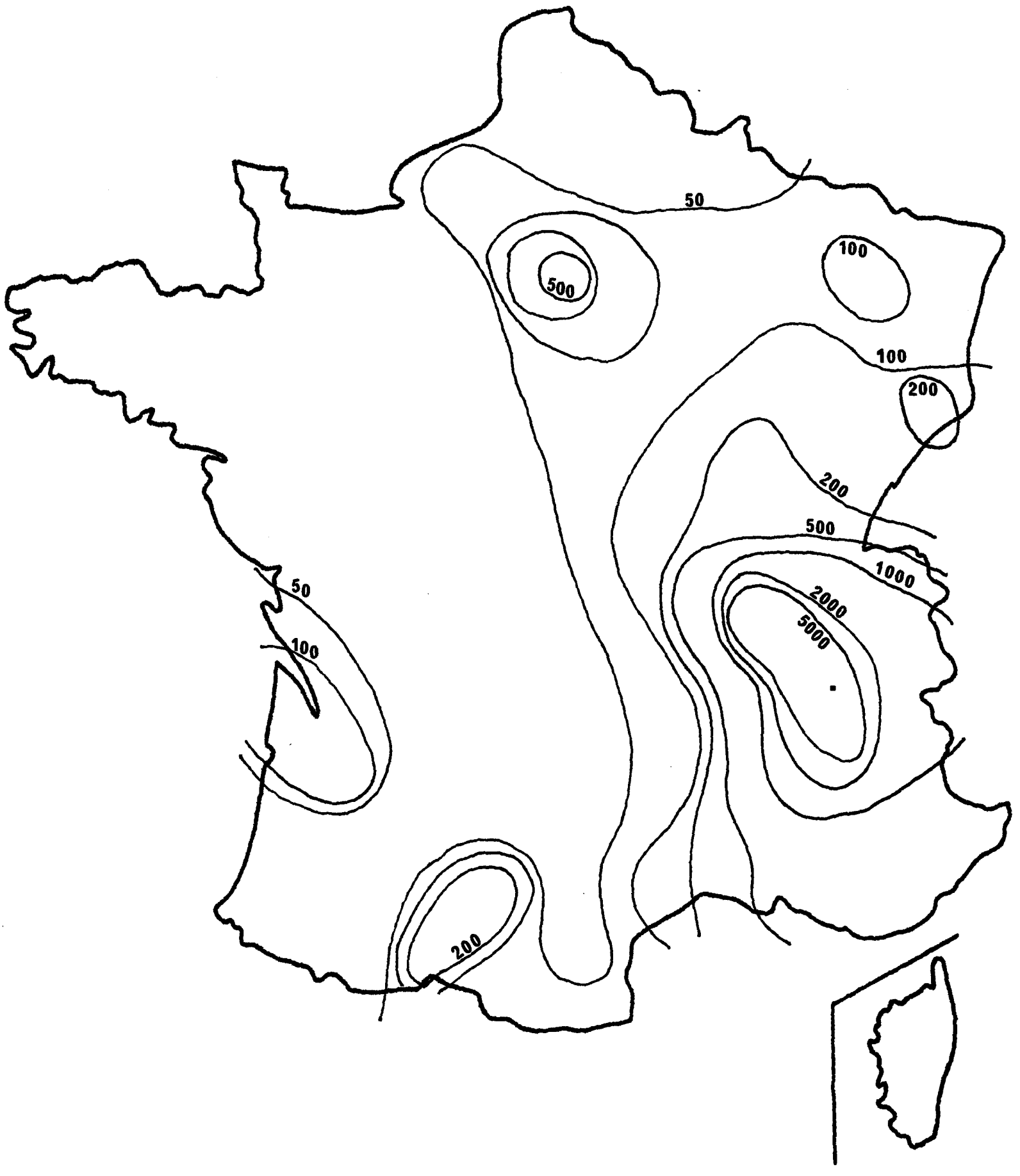
Migrants from Isère find a major destination in the wider Paris region, and to a lesser extent the centres of Haute-Garonne (Toulouse) and Gironde (Bordeaux). These urban centres form 'islands' of migration attraction in Western France where otherwise gross migration is at a low level, and generally marginally in favour of Isère.

Fig 5.26a. In-migration velocities to Isère 1891



50 Line of equal velocity

Fig 5.26b. Out-migration velocities from Isère 1891



The 1911 pattern of in and out migration and the migration balance (Figs. 5.27 and 5.28) indicate a continuation of the same pattern. In-migration velocities are at their peak from Savoy and the S.E. while a broad area of the Massif Central send a lower number of migrants. Outmigration continued to be dominated by Rhône. However the other major centres of attraction reflect their changed national importance. Bouches-du-Rhône became the second magnet for emigrants from Isère, displacing Paris to third rank. Gironde and Haute-Garonne no longer attracted significant numbers of emigrants from Isère, Haute-Garonne sending more migrants to Isère than vice versa. The net pattern therefore shows losses to Rhône and Ain, to the Provence coast and a broad area of Northern France. In general the pattern of in-migration shows some lessening of the friction of distance, while the pattern of out-migration is dominated less by distance than by the attraction of urban opportunity.

Between 1911 and 1946 Isère reached a turning point in its population history, experiencing absolute population growth after 1921 and becoming an importer of population. In 1946 it will be recalled that the Rhône-Alpes migration system became differentiated; distinguishing between Lyon on the one hand and the other centres, one of which was Isère. The maps of migration velocities for 1946 (Figs. 5.29 and 5.30) emphasise this change in status.

Fig. **5.27** In-migration velocities to Isère **1911**

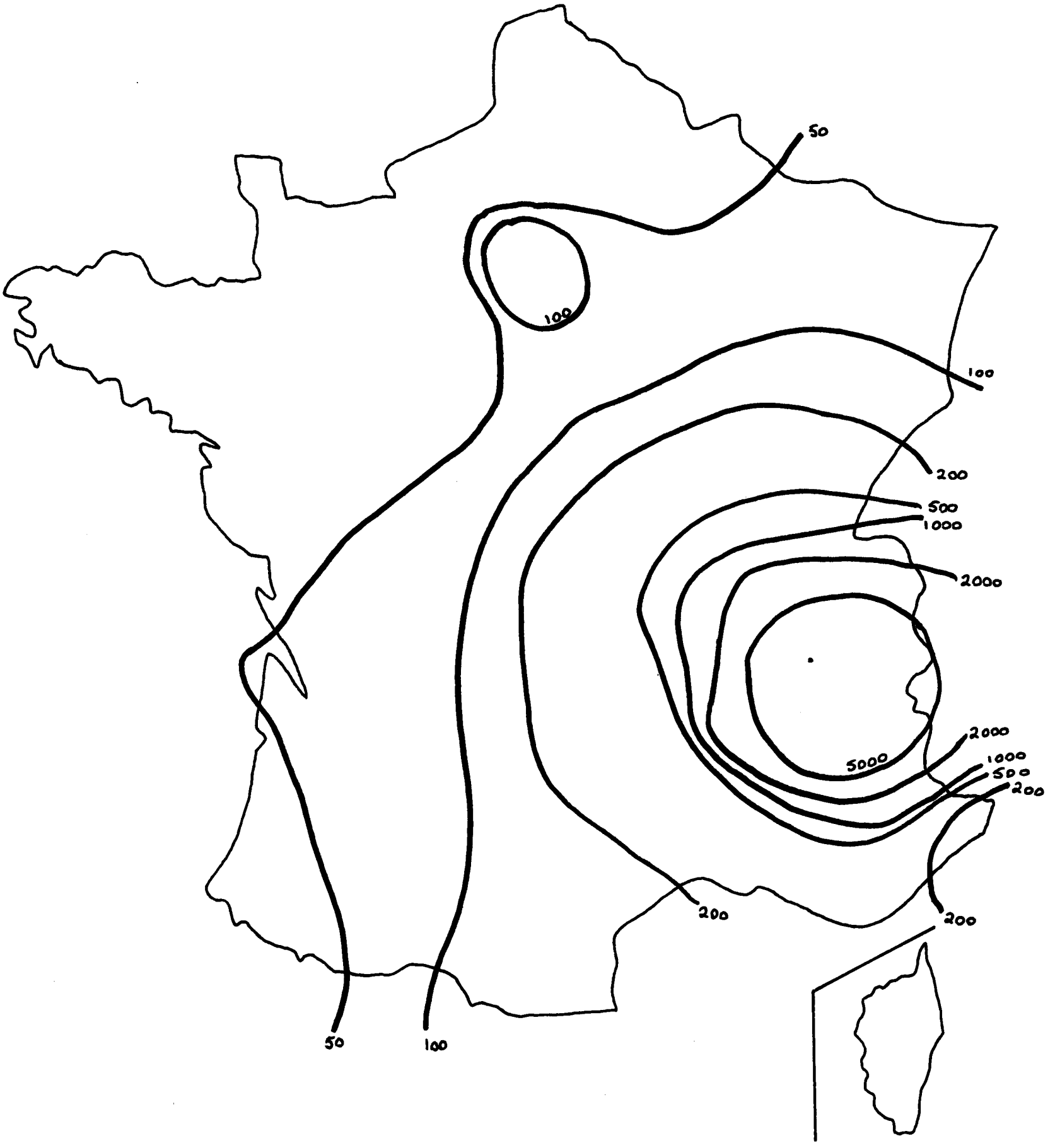


Fig. 5. 28 Out-migration velocities from Isère 1911

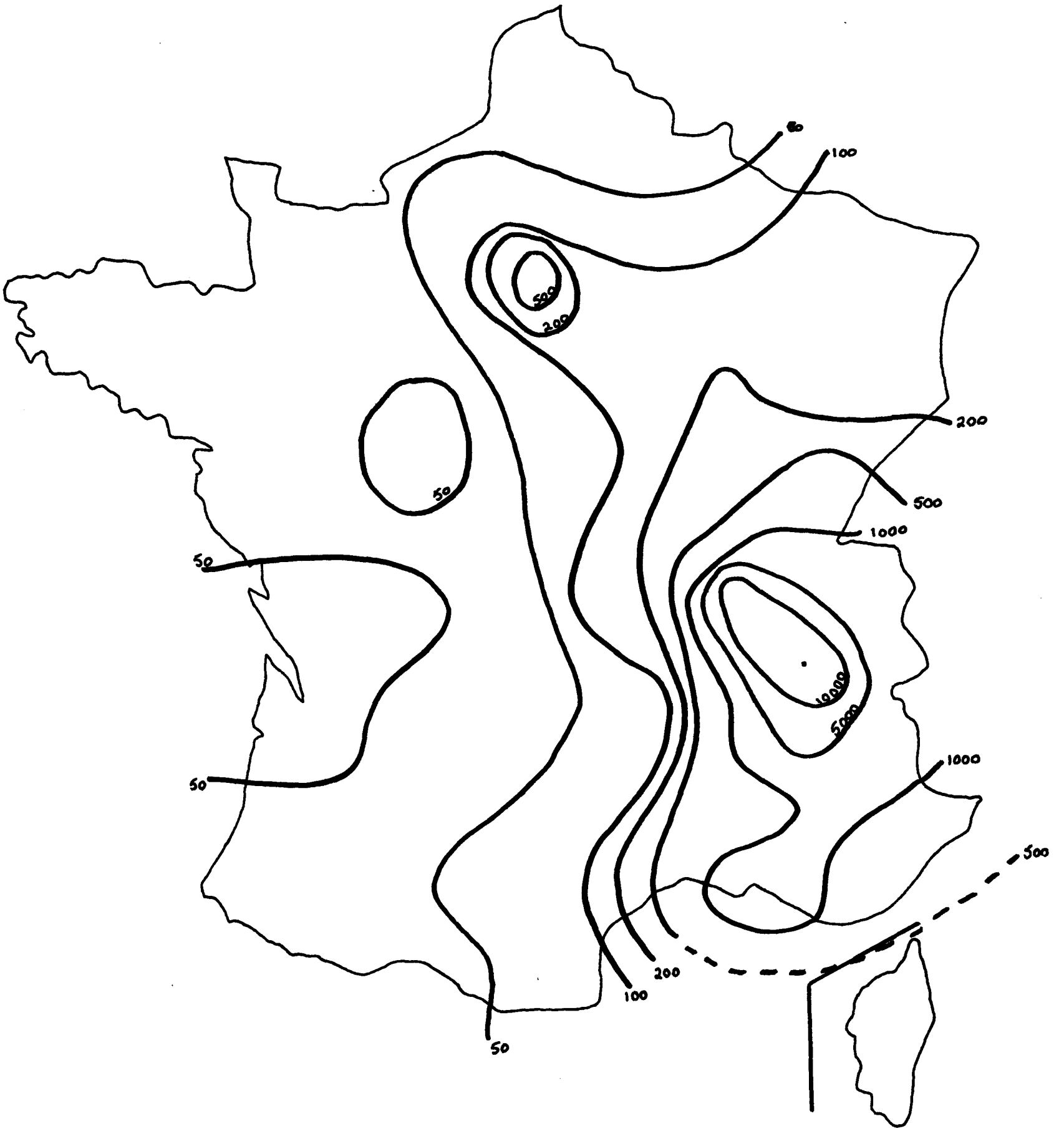


Fig. **5. 29** In-migration velocities to Isère **1946**

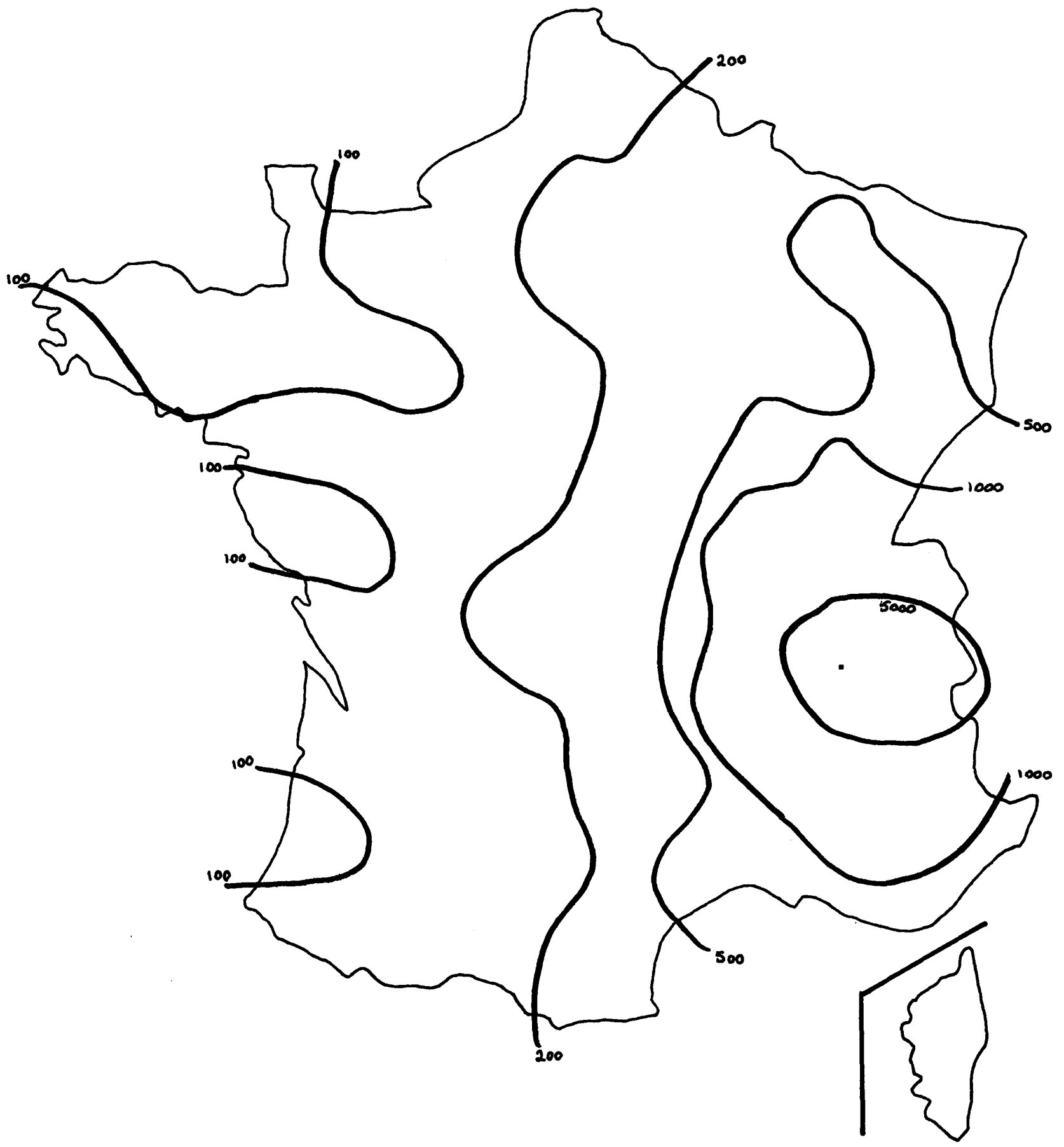


Fig. 5.30 Out-migration velocities from Isère 1946



In-migration (Fig. 5.29) continued from traditional source areas but also on a larger scale from the wider Rhône-Alpes region, emphasising its changing role as an emerging centre for neighbouring departments. The pattern of inmigration is also becoming more N - S orientated, although the 200 velocity isopleth still bulges over Paris and the Limousin. Under the 200 isopleth the least attractive areas were the Landes, the Vendee and the Breton peninsula, none of which would be expected to attract long-distance migrants because of their physical difficulties and poverty of agricultural and other economic development. (Fig. 5.30 shows that Isère in 1946 lost population only to the capital and the four major provincial centres and their satellites).

From 1946 Isère has experienced rapid population growth, contributed to substantially by in-migration. The post-war situation (with the changed data type) is shown for the periods 1954-62 (Figs. 5.31 and 5.32) and 1962-68 (Figs.5.33 and 5.34). It is clear that Isère exerts a strong attraction for the high Alps and Savoy and for the rest of the Rhône-Alpes. In the latter period the Massif Central 'bulge' finally disappears as the Massif becomes a 'relict area' with few migrants to send; and the pattern of in-migration closely follows the N - S orientation of out-migration, emphasising the 'corridors' influence on population and economic growth.

Fig. **5.31** In-migration velocities to Isère **1954-62**

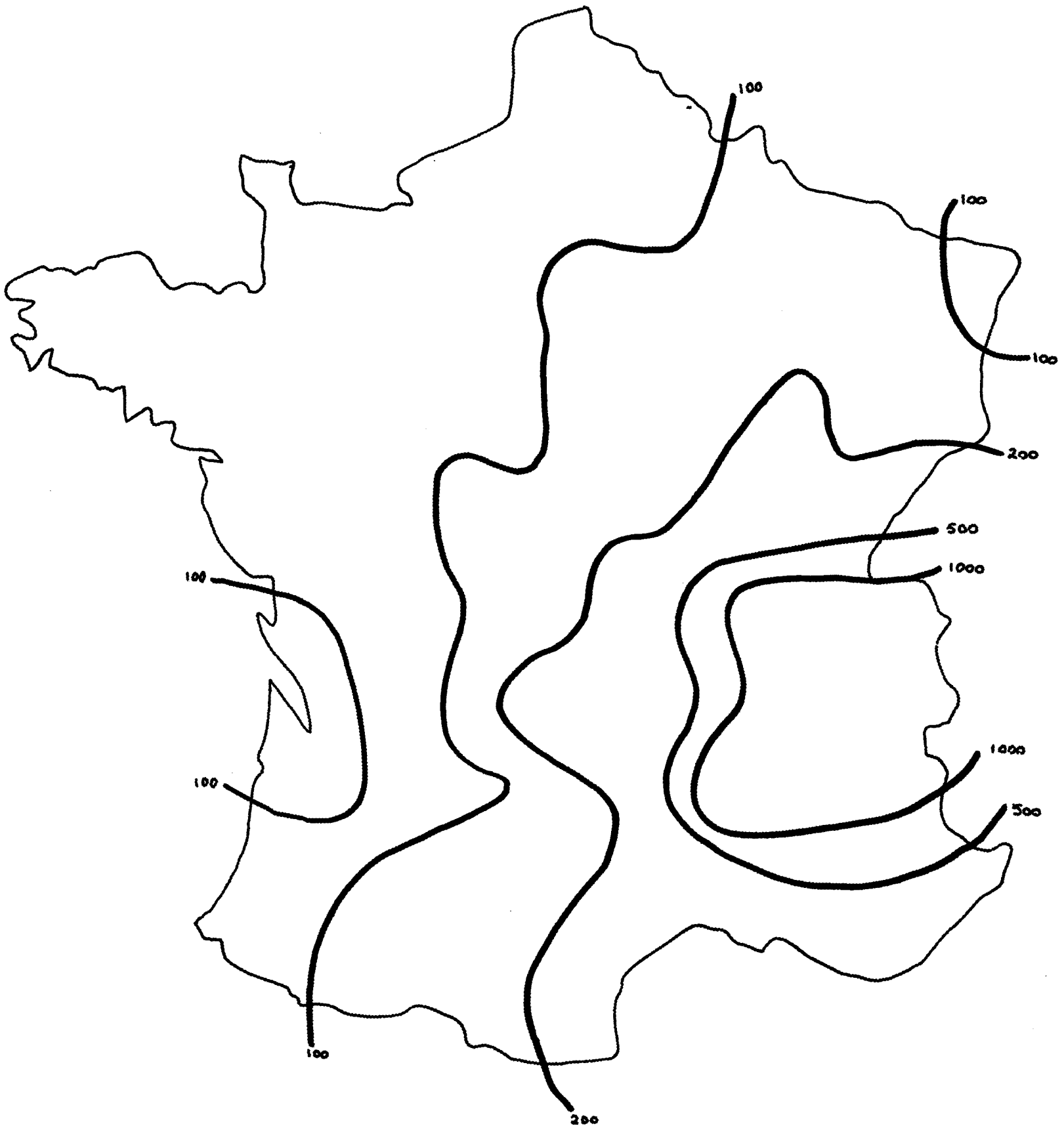


Fig. 5.32 Out-migration velocities from Isère 1954 - 62

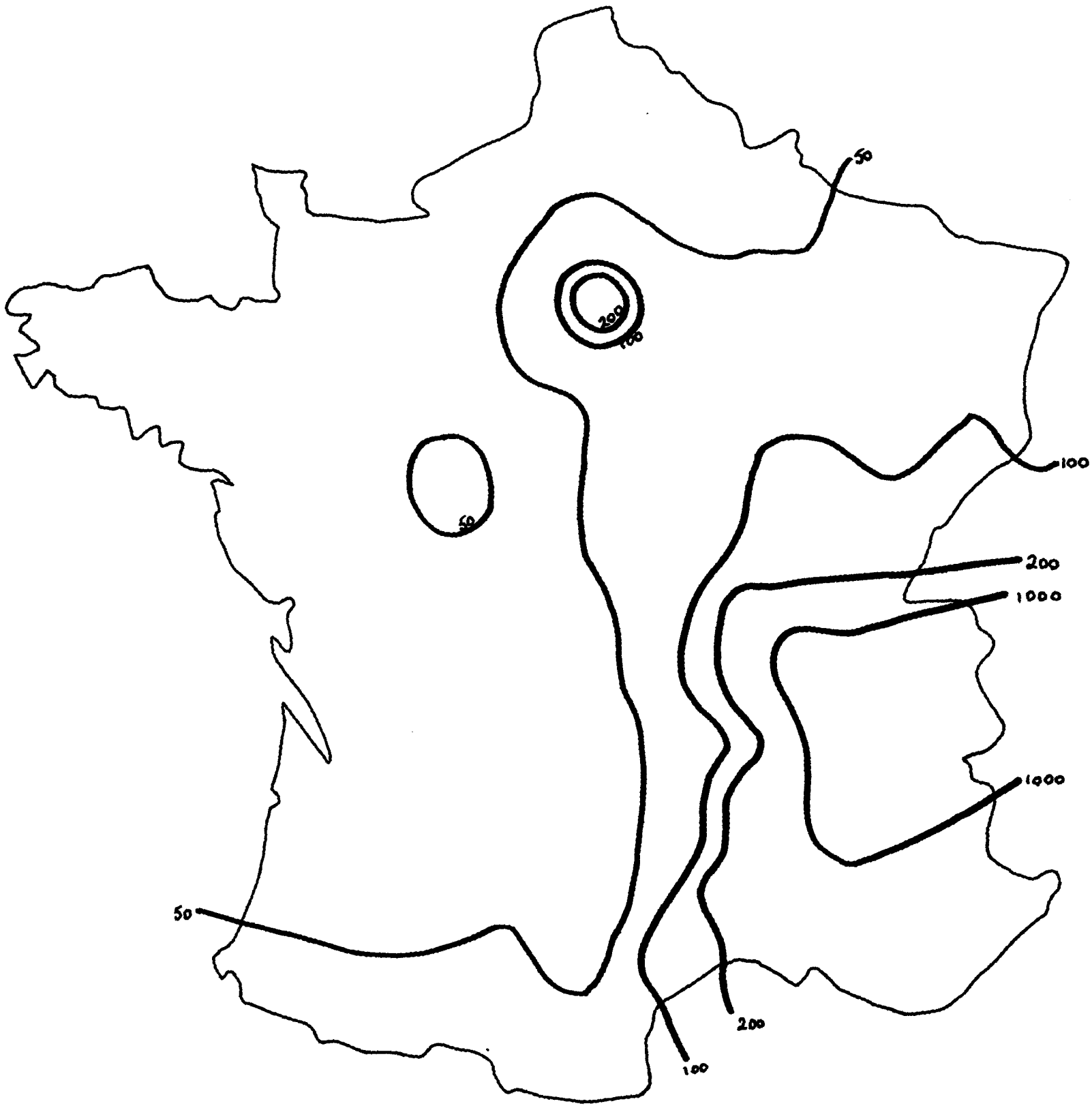


Fig. 5.33 In-migration velocities to Isère 1962-68

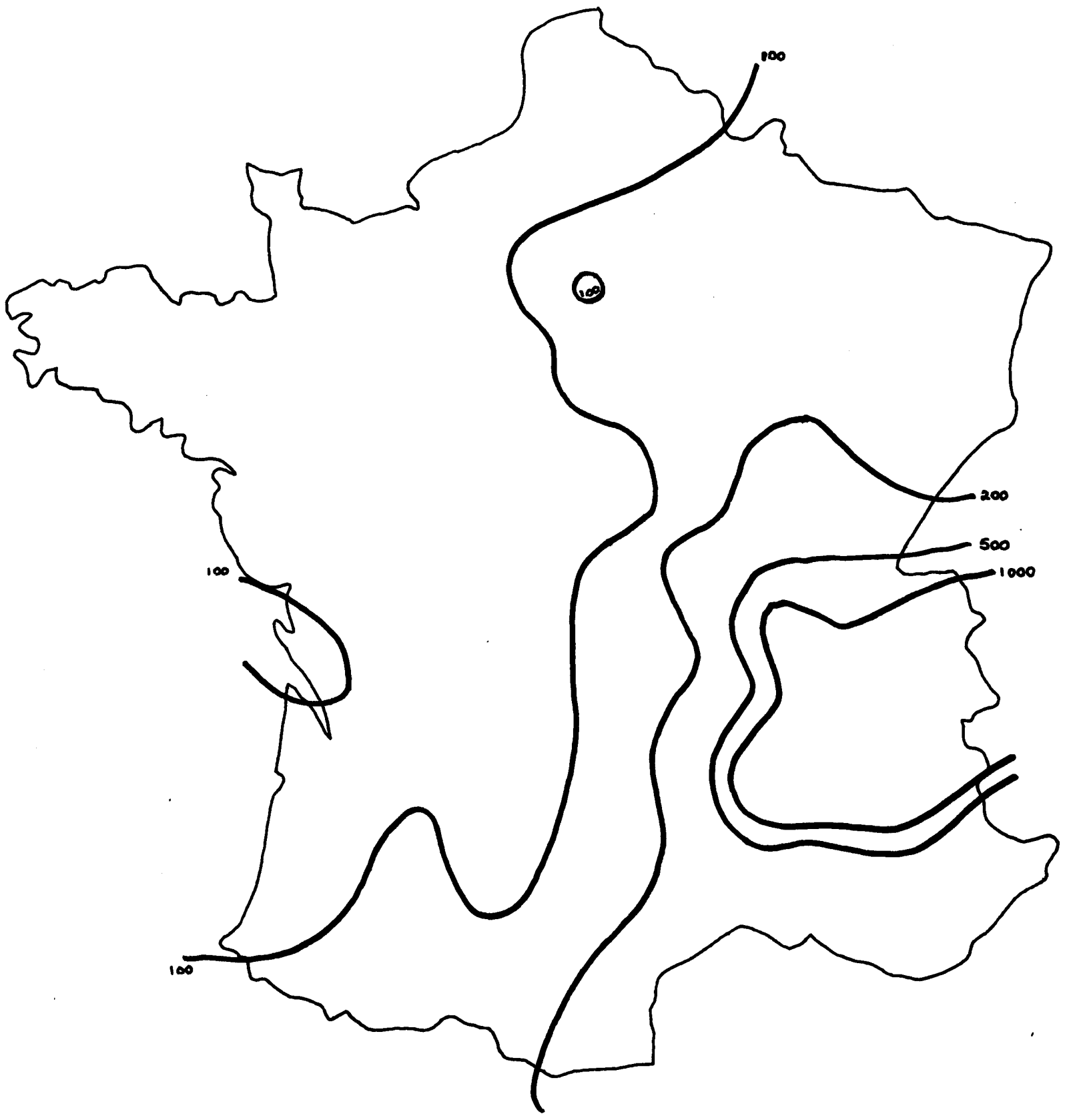


Fig. 5.34 Out-migration velocities from Isère 1962-68



The 1950s and 1960s saw the peak of in-migration throughout France, with net loss restricted to only three departments. The pattern of out-migration from Isère becomes more widespread in S.E. France, with less emphasis on other major provincial centres but a continuing out movement to Paris. Apart from to Paris, movements outward further than a distance of approximately 300 km. remain at a level only slightly higher than in 1891. Indeed Figs.5.26b and Fig. 5.34 make an interesting comparison.

In 1891 local movements were extremely numerous. Beyond the circle of neighbouring departments out movement was to Paris and major provincial centres. By 1962-68 the general pattern of movement is the same (note the position of the 100 isopleth) but there is relatively less local movement and only a remnant of the movement to Paris.

Comparison of Figs.5.26a and 5.33 also show some marked similarities, although of course the rate of in-migration is greater in 1962-68. The major difference is the removal of the source area of the Massif Central, as emigration has well passed its peak and in any case favours St. Etienne as an intervening destination. There is also a broader inmovement from the departments of the North-East, suggesting the emergence of the connected Eastern migration subsystems indicated in the national analysis. By this time Isère (Grenoble) is an

in-migration centre of national importance[1]. Thus the spatial pattern of migration to and from Isère has altered in correspondence with the national situation.

From 1891 to 1975 there have also been changes in the areas of population growth and migration attraction within Isère. The greatest growth of population predominantly earned by inmigration has occurred in urban and suburban areas while rural and isolated areas have suffered heavy losses. The characteristics of these areas of gain and loss within Isère, together with a study of the migrants themselves, provide the focus of more detailed study in the subsequent chapters.

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[1]The spatial pattern of migrations for the period 1968-1975 is not yet available.

Chapter 6. Areas of out-migration in Isère

6.0 Introduction

6.1 Out migration and natural change 1954-75

6.2 Analysis of characteristics of out-migration areas: A.I.D.

6.3 Characteristics of outmigration areas: Conclusions.

CHAPTER 6. AREAS OF OUT MIGRATION IN ISERE

6.0 INTRODUCTION

In the last chapter the communes which had lost population over the period 1891-1975 were found to be principally the communes which had a low original population. Indeed, within Isère the majority of communes lost rather than gained population; those that gained population consisted primarily of the urban-industrial communes of the Grésivaudan and the Rhône valley. The remoter rural areas, with difficult terrain and poorer conditions for agriculture have seen a decline in population for 100 years or more (see Fig.6.1).

Until the post war period, one is forced to talk of 'population loss' rather than distinguish between 'out-migration' or 'natural decline' because insufficient data is available to make such a distinction. Only in 1954 are data, other than simply population totals, available at the commune level.[1] In 1962 the large scale use of computerised information systems enabled the production of a vast proliferation of data, which has been reduced to more manageable proportions in subsequent years! Thus in this analysis attention is paid particularly to the period 1962-68: this is the most recent period for

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[1] In 1946 some information at cantonal level is available.

Fig. 6.1 Communes which have lost population 1891-1975



which published data was available, at the commencement of this thesis[1], and more importantly unpublished data from individual census returns relating to migrations was also made available for this period. This latter source provides information on the spatial patterns of within-department migrations and the characteristics of migrants themselves to supplement the published information on net balances. Although the census returns for 1962 had been mostly destroyed, and those for 1975 were still undergoing analysis, the 1968 census gives migrations for the 1962-68 period and thus this period was chosen for the initial reason that the data availability would allow for comprehensive study of migration to be undertaken.

The data constraints on the period chosen have certain advantages and disadvantages. It enables a thorough in-depth study to be made of a wide period. This is a period of rapid in-migration to Isère as a whole and redistribution within Isère; although the rate of in-migration is marginally lower than in the preceding intercensal period. Unfortunately it comprises an era which is now ten years old: but changes to 1975 are included in the thesis wherever practicable. However, the aim of the thesis is to provide some general insight

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[1] Although information from the 1975 census was very quickly processed from 1976 onwards.

into the migration process, particularly in relation to its agricultural context and urban destination areas; rather more than an empirical study per se of the migration patterns of Isère and in fulfilling this goal the scope of the data rather than its recency is paramount.

6.1 OUT-MIGRATION AND NATURAL CHANGE 1954-75

A general examination of population change within Isère has shown a polarisation of population densities since the maximum of rural population in 1851. The majority of communes have lost population since 1891, particularly the smaller, more isolated and rural communes (see Fig.6.1). On the one hand the Grésivaudan, lower Drac, Rhône valley and larger towns have gained population. The concern of this chapter is those communes which have lost population.

From 1954 the bare facts of population change may be disaggregated into natural growth/decline and migration gain or loss. The contribution to total change attributable to migration is more variable from commune to commune than natural growth. In general terms, however, natural decline may be said to be symptomatic of all communes under 500 population (Observatoire Economique 1976), and this has been a characteristic of rural communes at least since 1954 where populations are aged by out migration.

In 1954-62 (Figs. 6.2 and 6.3) migration loss is most marked in the mountain fringes of the department. In-migration is confined to the Grésivaudan, lower Drac, Rhône valley, the outer suburbs of Lyon and a loose string of communes along the Bourgoin-Jallieu route to la Tour du Pin. There is a reasonable correlation between migration and natural growth: greatest natural decline in areas of highest emigration.

Fig. 6.2 Population change due to migration 1954-62

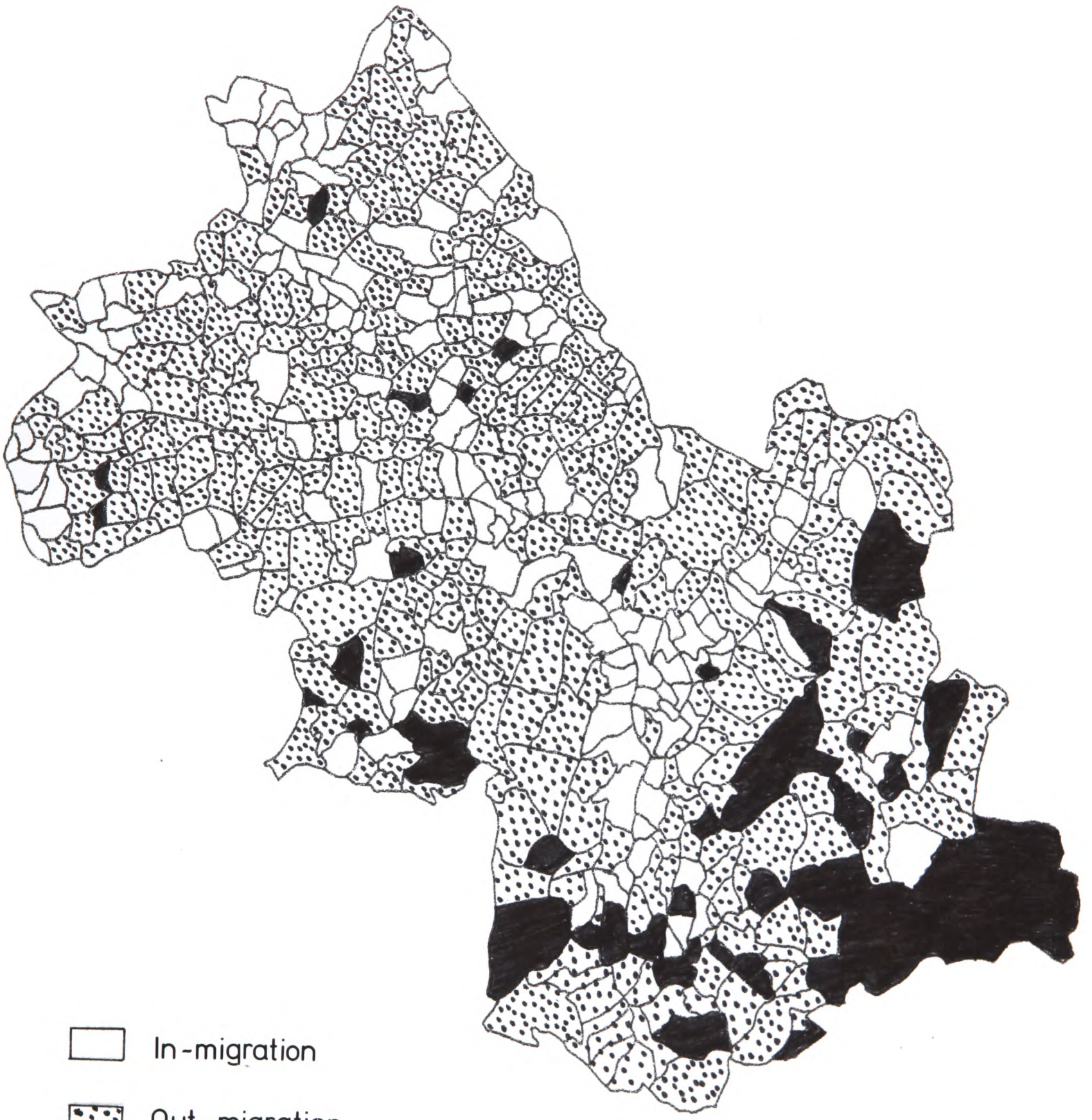
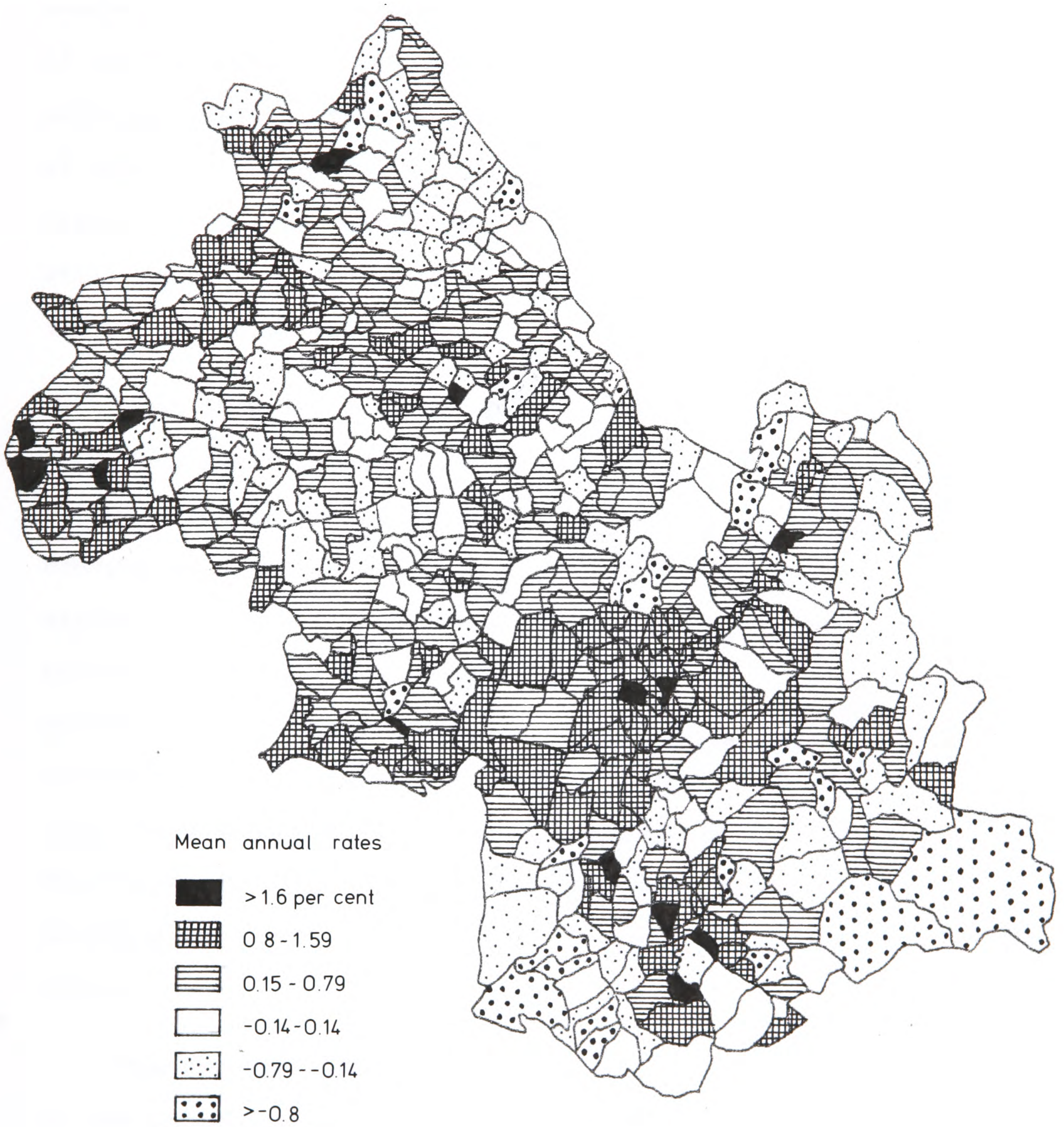


Fig. **6.3** Natural growth **1954-62**

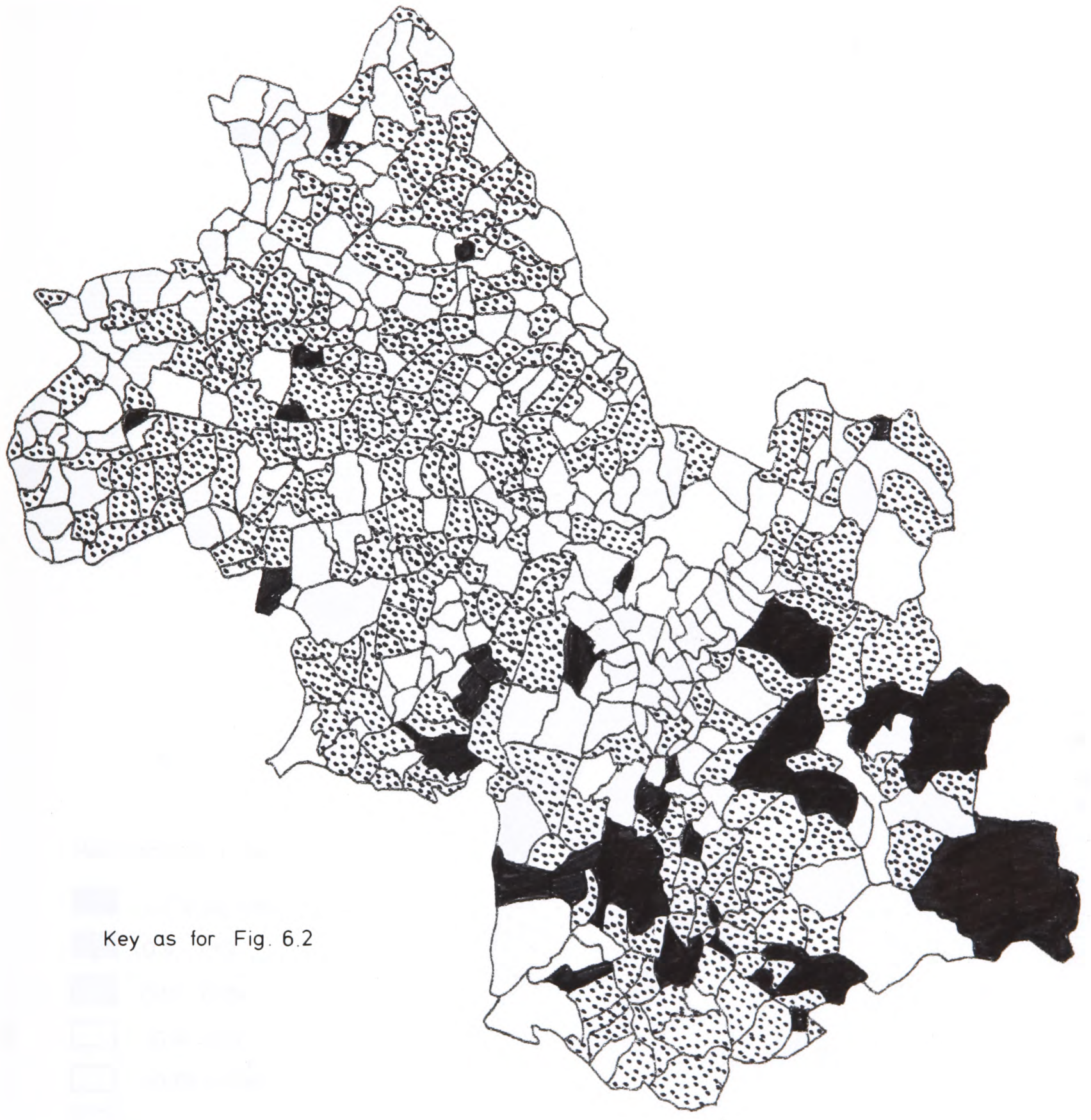


In 1962-68 (Figs. 6.4 and 6.5) the pattern of out-migration is more restricted. In-migration affects a wider area including the Chartreuse, and a heavier concentration in the Bas-Dauphiné. The highest rates of natural growth correspond to the areas of in-migration, although city centres no longer achieve such high rates of growth. Heavy natural loss is characteristic of the Oisans but the Matésine, experiencing out-migration still maintains natural growth from its relatively young industrial population.

From 1968-75 (Figs. 6.6 and 6.7) the areas of out-migration again recede. Out-Migration has become heavily concentrated in the Matésine and Taillefer while city centres of Grenoble and Vienne experience slight out-migration. However the rate of natural growth has fallen following a decline in fertility 1964-74. The mountain zones' natural deficit becomes aggravated and extended with the exception of the Vercors. There is a widespread extension of areas of natural deficit in the Bas-Dauphiné. Thus the gain by migration in the Bas-Dauphiné is in many parts counterbalanced by a natural loss.

The fluctuations of this post-war period are indicative of the achievement of a modern phase in the demographic transition: showing evidence of a low but variable birth rate and enhanced personal mobility.

Fig. 6.4 Net migration 1962-68



Key as for Fig. 6.2

Fig. 6.5 Natural Growth 1962 - 68

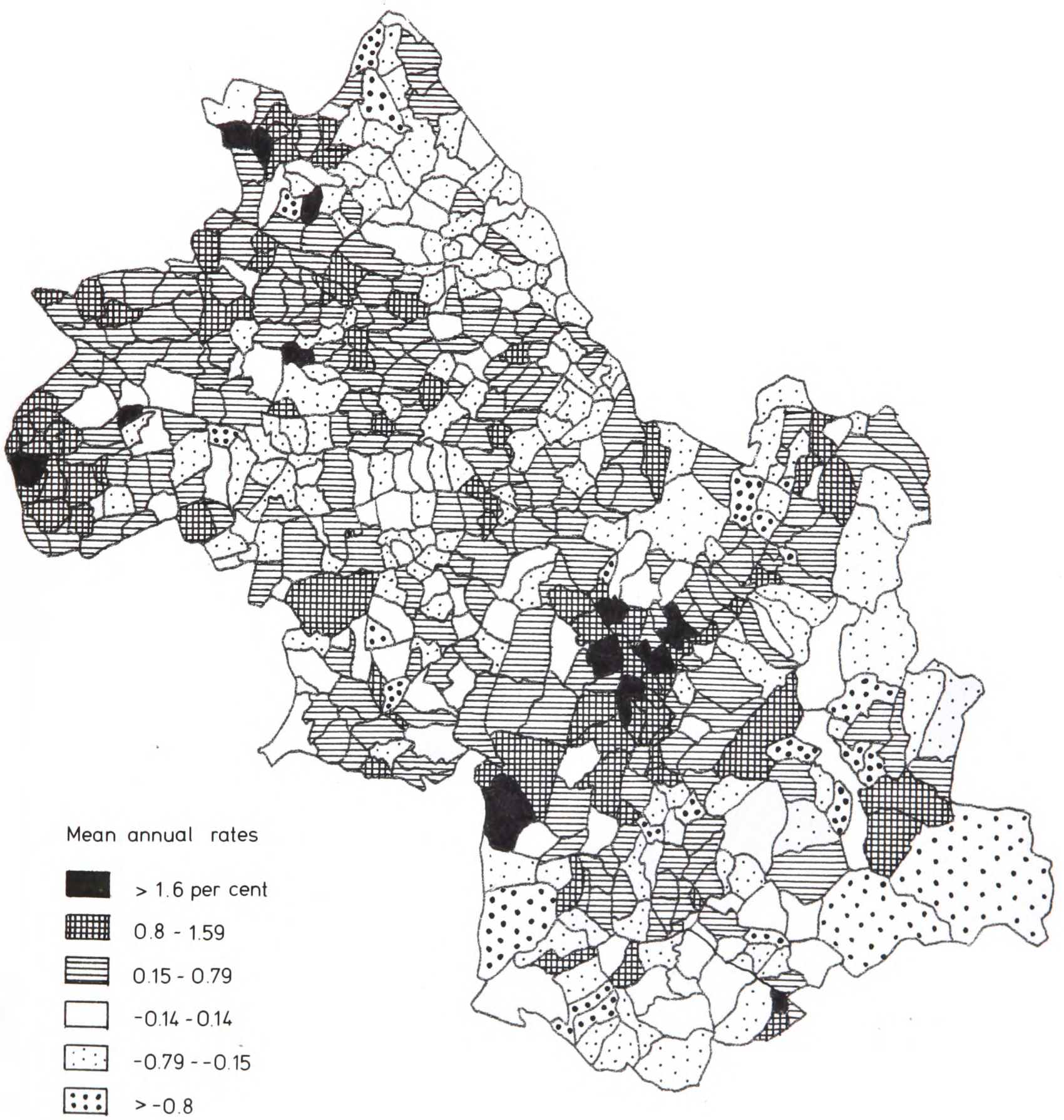
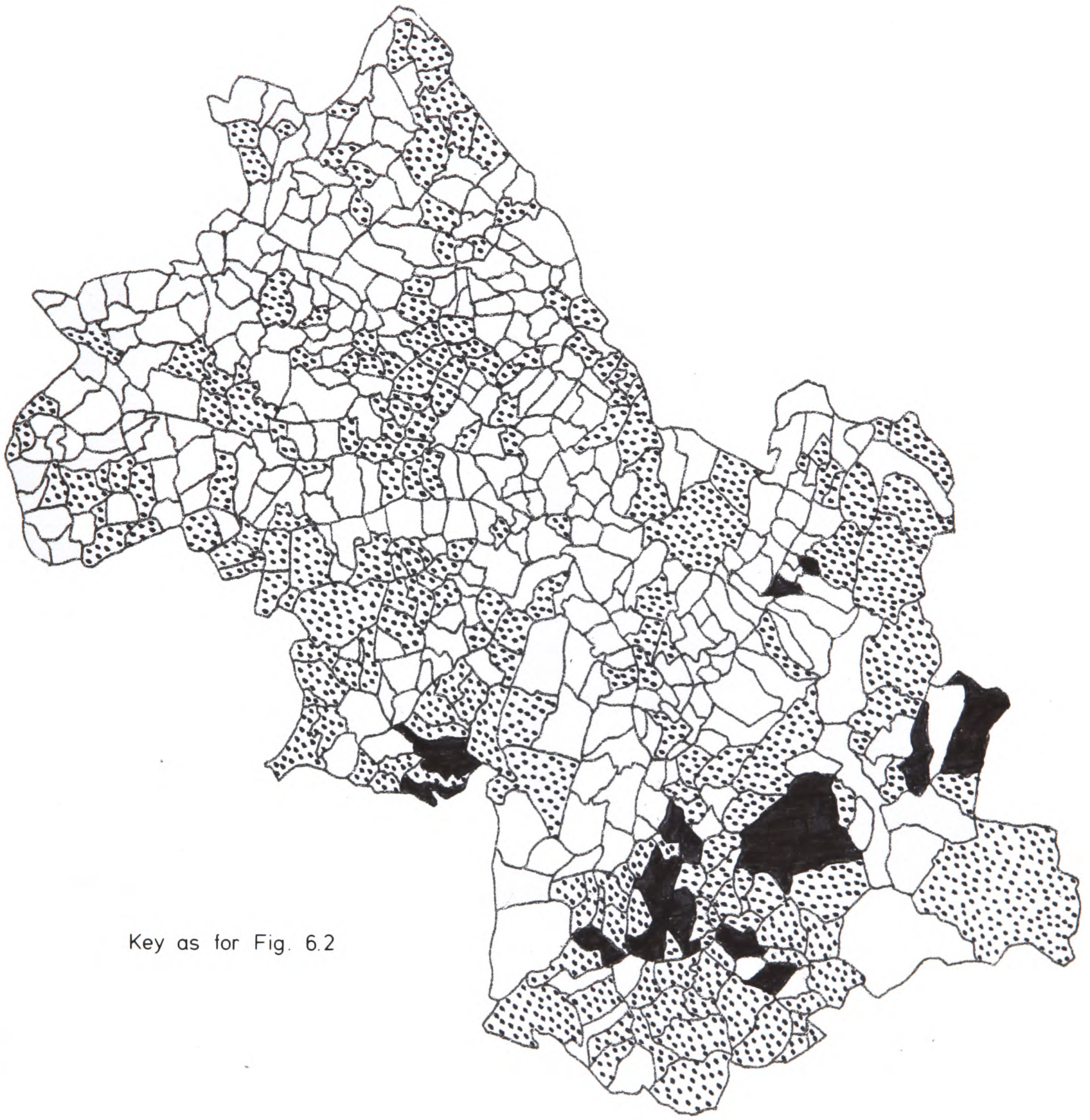
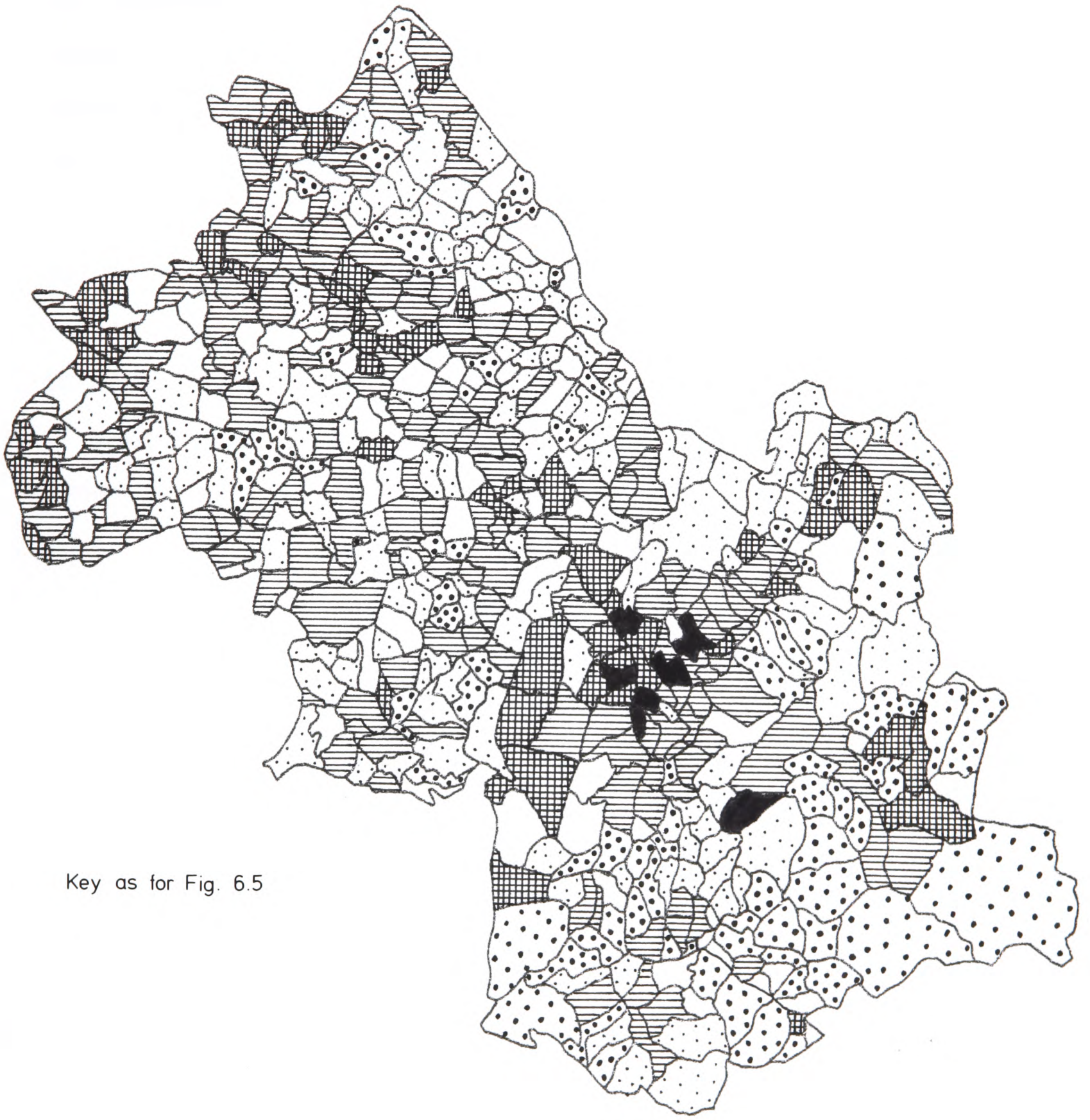


Fig. **6.6** Net migration **1968 - 75**



Key as for Fig. 6.2

Fig. 6.7 Natural growth 1968 - 75



Key as for Fig. 6.5

Having identified the main areas of migration loss in the post-war period it is necessary to consider the characteristics of these areas and the possible reasons for out-migration. It is clear that the 323 communes experiencing loss in 1962-68 are the smaller, isolated more rural communes but there is as yet no other clue as to their economic or demographic characteristics. In order to analyse the characteristics of loss areas and to form some typology of communes which are the subject of different migrational forces A.I.D. analysis is introduced in the next section and applied to a range of information describing different facets of those communes.

6.2 ANALYSIS OF CHARACTERISTICS OF OUT-MIGRATION AREAS: A.I.D.

The characteristics of the areas under consideration which it is desired to analyse using census data are listed in Table 6.1. They consist of five groups of variables; locational, demographic, economic, housing and agricultural. They correspond as closely as possible to the data set used for the national analysis, but exclude highly correlated variables. Thus, for example, agricultural employment is retained but industrial employment is excluded because of the high negative correlation. Similarly housing with bath is excluded because of its high correlation with housing with w.c. A further variable, second homes, is included, as an indicator of tourist development and permanency of occupation. It was hoped to utilise further variables on service provision but two problems arose: firstly that service provision data is obtainable only from the 1971 enquête communale, and secondly, even assuming that this a posteri data could be used, a large number of communes had no service provision at all (e.g. church, school) causing problems in the analysis.

The correlations between variables reiterate at the micro-scale some of those found for the post-war years at a national scale (see Table 6.2). Most of the significant correlations relate to agricultural structure: intensive farming (e.g. in the Rhône Valley) vines, tractors and

Table 6.1 Characteristics of areas of out-migration: variables used in A.I.D.

1. Dependent variable: Annual migration loss 1962-68

Independent variables

Location:	2.	Altitude of the chef-lieu of the commune
	3.	Distance from Grenoble (or other large city over 50,000 population)
Demographic:	4.	Population density 1962
	5.	Sex ratio (% male)
	6.	% population aged 0 - 19
Economic:	7.	% population actively employed
	8.	% population in agriculture
Housing:	9.	Persons per room
	10.	% of houses in owner-occupation
	11.	% of houses with w.c.
	12.	% of houses built pre-1914
	13.	% of houses which are second homes
Agricultural:	14.	Livestock equivalents per 100 hectares of agricultural land
	15.	Workers employed " "
	16.	Tractors in use " "
	17.	Area under cereals " "
	18.	" " vines " "
	19.	" " market gardens " "
	20.	Mean size of farm

Variables 2 and 3 are taken from the Enquête Communale 1971

Variables 4 to 13 " " " " Population Census 1962

Variables 14 to 20 " " " " Agricultural Census 1955

Table 6.2 Correlation matrix: characteristics of areas of out-migration Isère 1962-68

		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Altitude	2																			
Distance	3																			
Pop'n density	4	-																		
% male	5																			
Age 0 - 19	6																			
Active population	7																			
Agricultural empt.	8			-																
Persons per room	9																			
Houses owned	10							+												
Houses with w.c.	11																			
Houses pre-1914	12																			
Second houses	13																			
Livestock	14																			
Workers	15			+				-												
Tractors	16	-		+																
Cereals	17	-																		
Vines	18	-		+													+			
Market gardens	19																	+		
Mean farm size	20			-											-					
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

+ - correlation at 1% level

+ - correlation at 5% level

workers) is negatively related to altitude and positively related to population density and small farms. Agricultural employment is positively related to home ownership, a housing phenomenon common in France. The highest correlation (over .75) is the negative relationship between workers per 100 ha and mean farm size, indicating that the smallest farms are most labour-intensive, due as indicated above to the type of agriculture practised. In general, however, the variables selected for further use were as independent as possible.

The method of analysis chosen was that of automatic interaction detection, a multivariate technique introduced by Morgan and Sonquist (1963a,b). A.I.D. is essentially a multivariate analysis of variance, which successively splits the data matrix by binary divisions into a number of subgroups. The data matrix consists of a single dependent variable and one or more independent variables. The data matrix is thus split on the basis of maximising the 'between group sum of squares' and minimising the 'residual sum of squares' of the dependent variable.

The application of A.I.D. to the 'losing' communes (dependent variable) results in a classification based on other factors which are most powerful in explaining this loss. Moreover in contrast with more traditional techniques (those based on Ward's algorithm) it is possible to assess the power (using A.I.D.) of the factors which form the basis for that classification as in regression. The technique thus has major advantages in the analysis of types of areas from which migrants move. Indeed A.I.D. has been used in a migration context before (Forsyth and Mercer 1973) as well as in Education (Orr 1974) and population studies (Ross and Bang 1966). However, it is a relatively new and under utilised method, overshadowed by the popularity of the well-established factor analytic group of techniques.

The dependent variable was left untransformed (mean +1.7533 s.d. 1.7346 Skewness -3.88), but the signs were all made positive. The independent variables were catogorised into a maximum of 8 groupings after preliminary examination of their frequency distributions. 'Natural breaks' in the data were used as far as possible compatible with maintaining approximately equal numbers in each category. Comparability of group sizes helps maximise the efficient working of the program and consequent level of explanation. Certain criteria were adopted regarding the size of the final groups of areas (minimum group size

before split = 15, minimum group size after split = 5), to ensure that groups of an adequate size remained, the cohesiveness of which could then be determined by reference to the original data.

In describing the results of the A.I.D. the major distinguishing variables are first considered and attention is then turned to the nature of the final groups. Indeed the results of the techniquesare such that the groups are arranged in descending/ascending order of migration loss so that it is possible to distinguish groups of communes at different poles of the loss continuum and to assess the contribution of the factors which determine their positions.

The first major split of the data matrix occurs where the between sum of squares is at its maximum. All variables and all possible splits between subgroups of each variable are considered in each iteration. The first major split is made on Variable 2 (Altitude) between subgroups 0 - 4 and 5 - 7 (see Table 6.3), where the between sum of squares is at its maximum.

Thus the overall group is split into two main groups (Groups 2 and 3) differentiated primarily by altitude. Group 2 consists of 204 communes with an altitude below 521 metres whose average out-migration loss is 1.24% per annum. Group 3 consists of 119 communes of an altitude between 521 metres to over 1000 metres with an

Table 6.3 Decomposition of Group 1 (all) into Group 2 and Group 3 by Variable

Sub-group Code	(Communes in each subgroup) N	Sum of Y (dependent variable)	Sum of Y-Square	Mean	Std. Dev.	B.S.S.
0	41	4634.00	845622.00	113.02	88.60	182,309.49
1	41	4131.00	797603.00	100.76	96.45	514,792.66
2	41	5758.00	1,373,684.00	140.44	117.39	651,255.62
3	42	5693.00	1,340,397.00	135.55	116.37	940,724.94
4	39	5056.00	1,647,080.00	129.64	159.46	1,465,676.73
5	39	8457.00	3,070,773.00	216.85	178.09	1,309,150.65
6	39	11956.00	6,143,386.00	306.56	252.07	394,620.56
7	41	10947.00	4,429,547.00	267.00	191.00	9,718,731.55

average out-migration loss of 2.64% per annum, double that of Group 2. Thus the split is essentially high altitude/high emigration, and low altitude/low emigration, emphasising the continuing importance of the influence of the physical environment on human behaviour; the difficult terrain, physical and social isolation, and marginal conditions for agriculture combining to expel population. The lower altitude areas with easier physical conditions have on average less than half the loss of population due to out-migration.

Group 2 (Fig.6.8) consists solely of communes in the Bas-Dauphiné, Grésivaudan and Lower Drac, and contains no part of the South-eastern mountain rim. Group 3 (Fig.6.9) is however not only those communes of the Alps but also parts of the Chartreuse and Vercors, and some of the more upland communes of the Terres-Froides and Royans.

These major groups are subsequently split into further groups on the same principle of choosing the variable and the split within that variable to maximise the between sum of squares. The next split to be made divides Group 3 (High Altitude/high emigration) on the basis of owner-occupation of housing into Groups 4 and 5. This and subsequent splits are shown in the fold-out Fig.6.10.

Group 4 consists of high altitude, high emigration communes with a low proportion of owner-occupied houses. This is further subdivided into Groups 8 and 9 on the basis

Fig. 6.8 Group 2 : Low altitude / low emigration communes

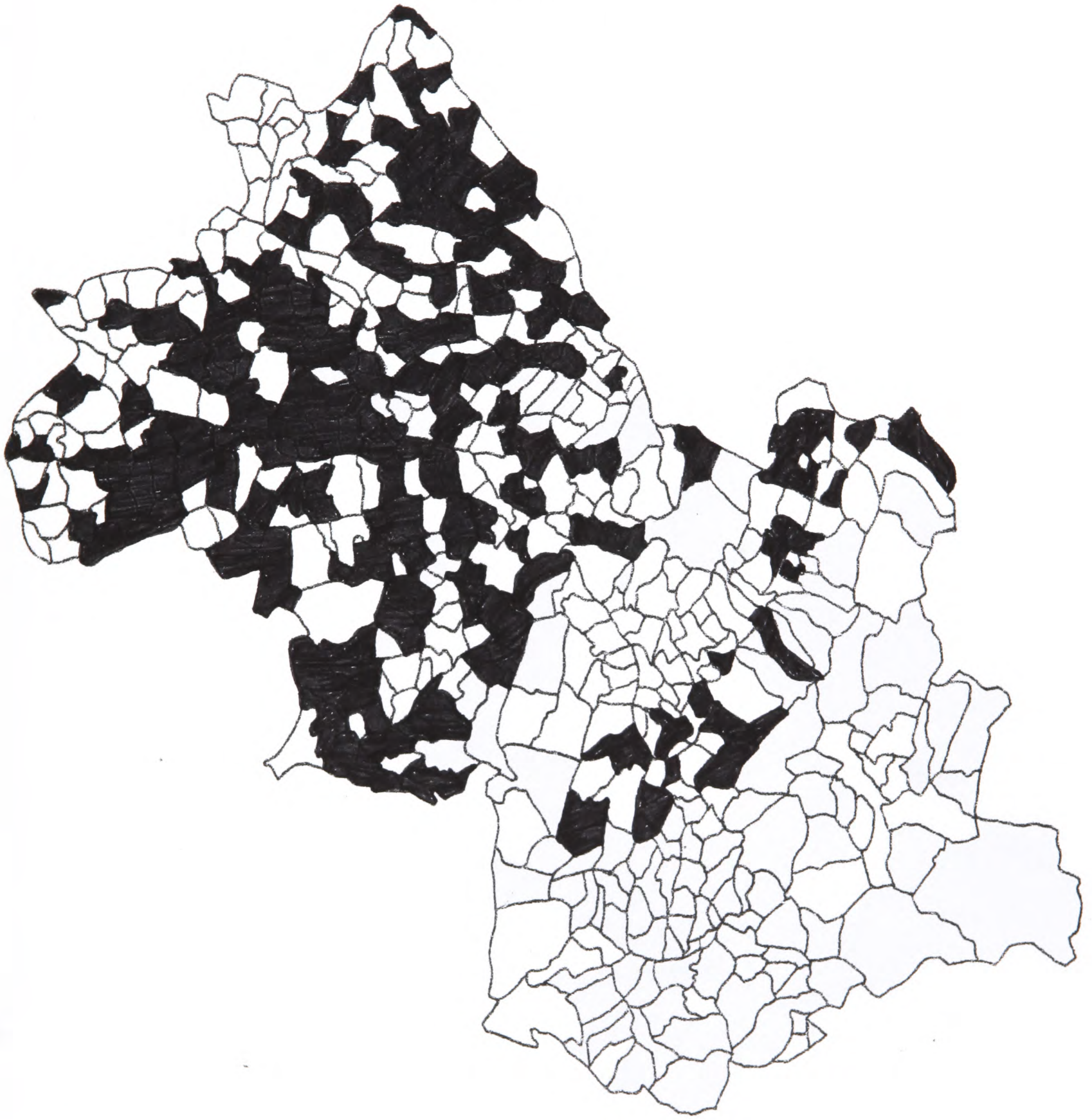


Fig. **6.9** Group **3**: High altitude / high emigration communes

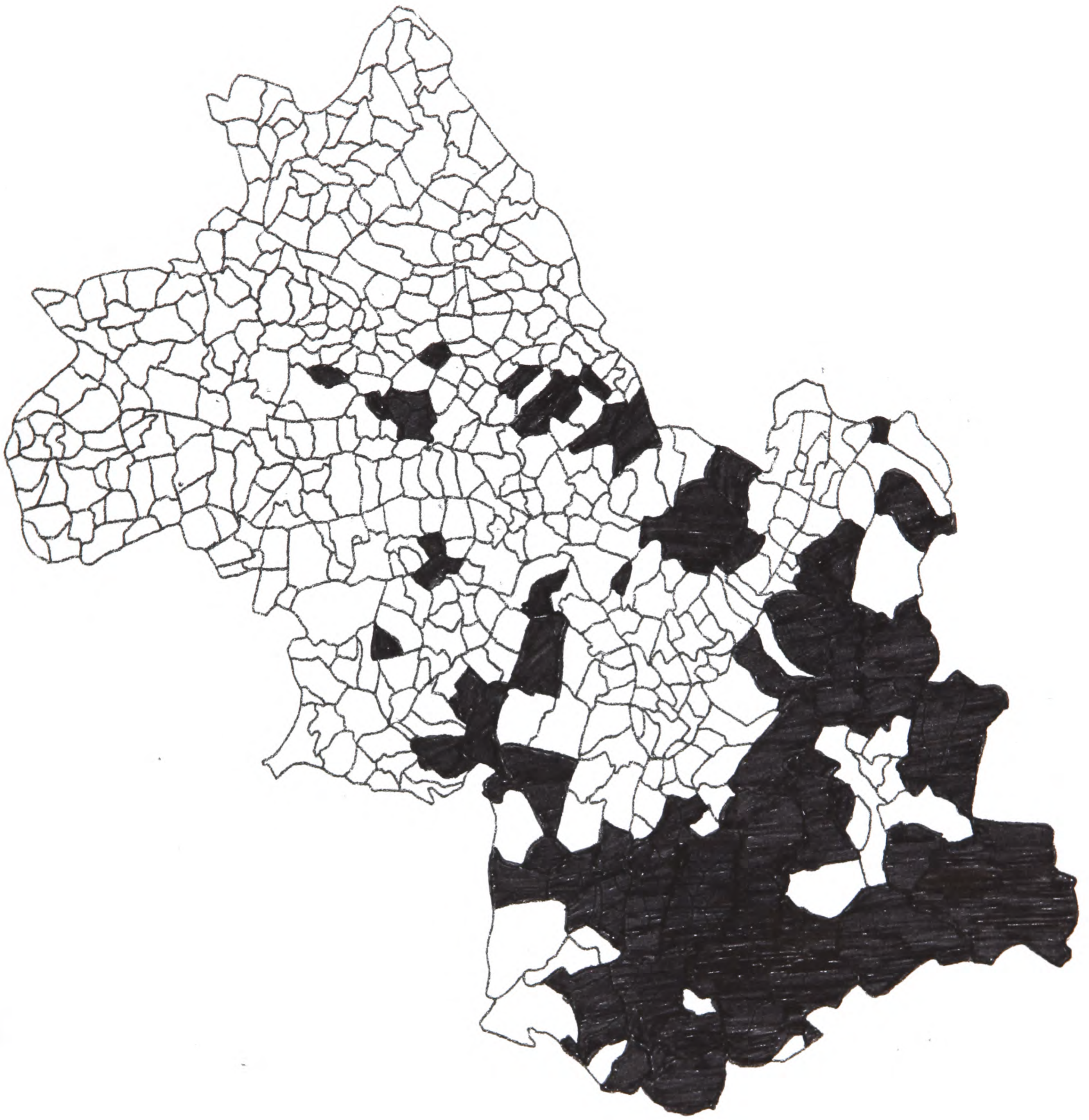
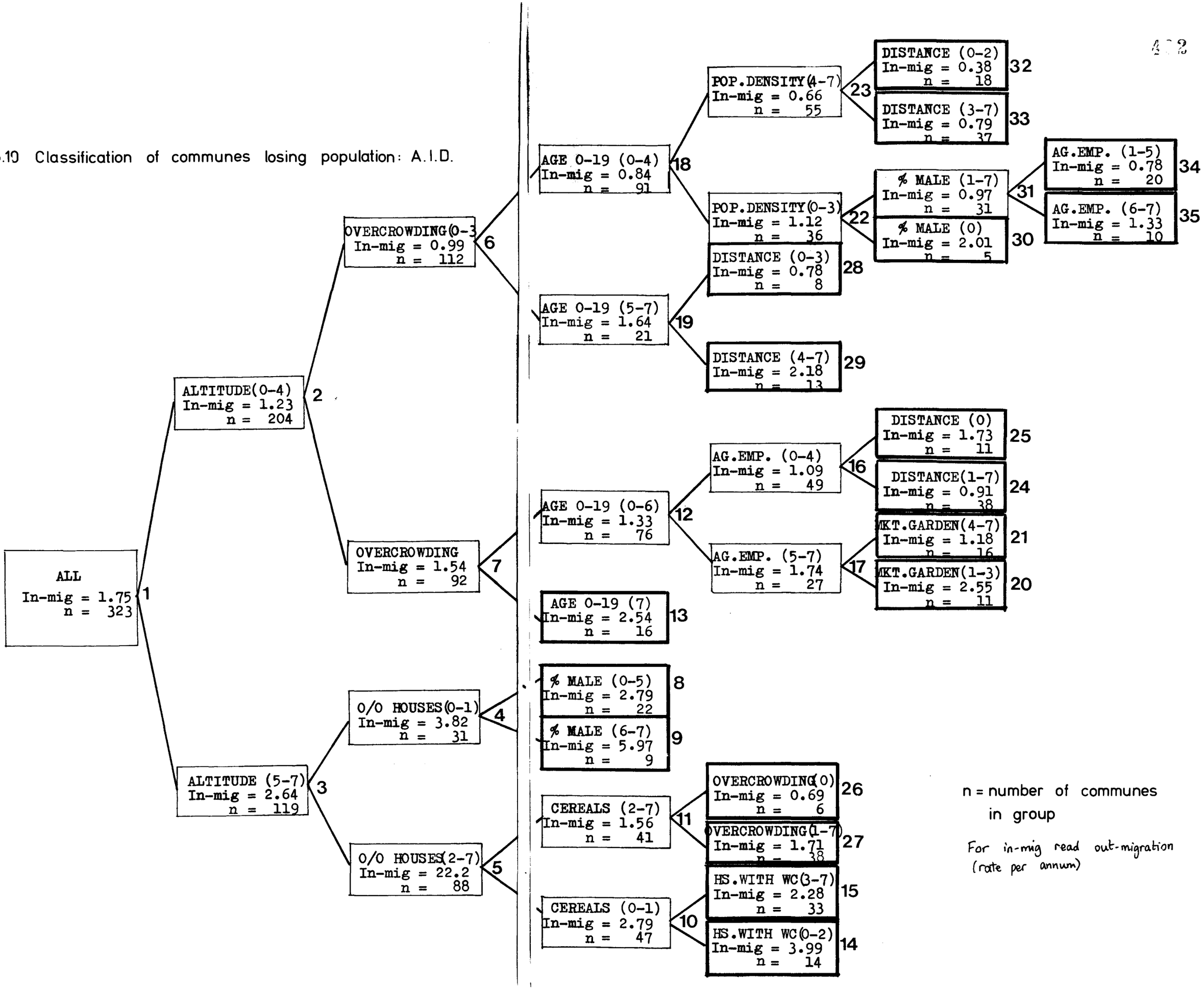


Fig. 6.10 Classification of communes losing population: A.I.D.



n = number of communes in group

For in-mig read out-migration (rate per annum)

of the sex ratio of the population. Group 8 (Fig.6.11), the first final group to emerge, consists of 21 communes of the industrial plateau of the Matésine, and communes of the Vercors. The low rates of owner-occupation may be accounted for by the employment structure of these communes, which have relatively high proportions employed in industry and in service occupations, respectively. Group 9 (Fig.6.12) contains only 9 communes with a higher proportion of male occupants from 53 to 63%. This may be accounted for by industry (e.g. Livet et Gavet) or by special characteristics(e.g. St.Hilaire du Touvet has a high institutional population). In other communes this rate of male population has been brought about by excessive emigration (Group 9 communes have an average annual loss of almost 6%).

Group 5 (high altitude, high emigration, high owner-occupation) consists of the rest of Group 3 which is primarily agricultural in character: it splits further into Groups 10 and 11 on the basis of the proportion of cereals. Group 10 which has less than 10% of its agricultural land under cereals splits further into Groups 14 and 15. This low proportion of cereals is characteristic of the high mountain areas of the Belledonne and Oisans, which have high rates of out-migration.

Group 14 (6.13) is differentiated from Group 15 by the percentage of houses with w.c. The communes in Group 14

Group 8

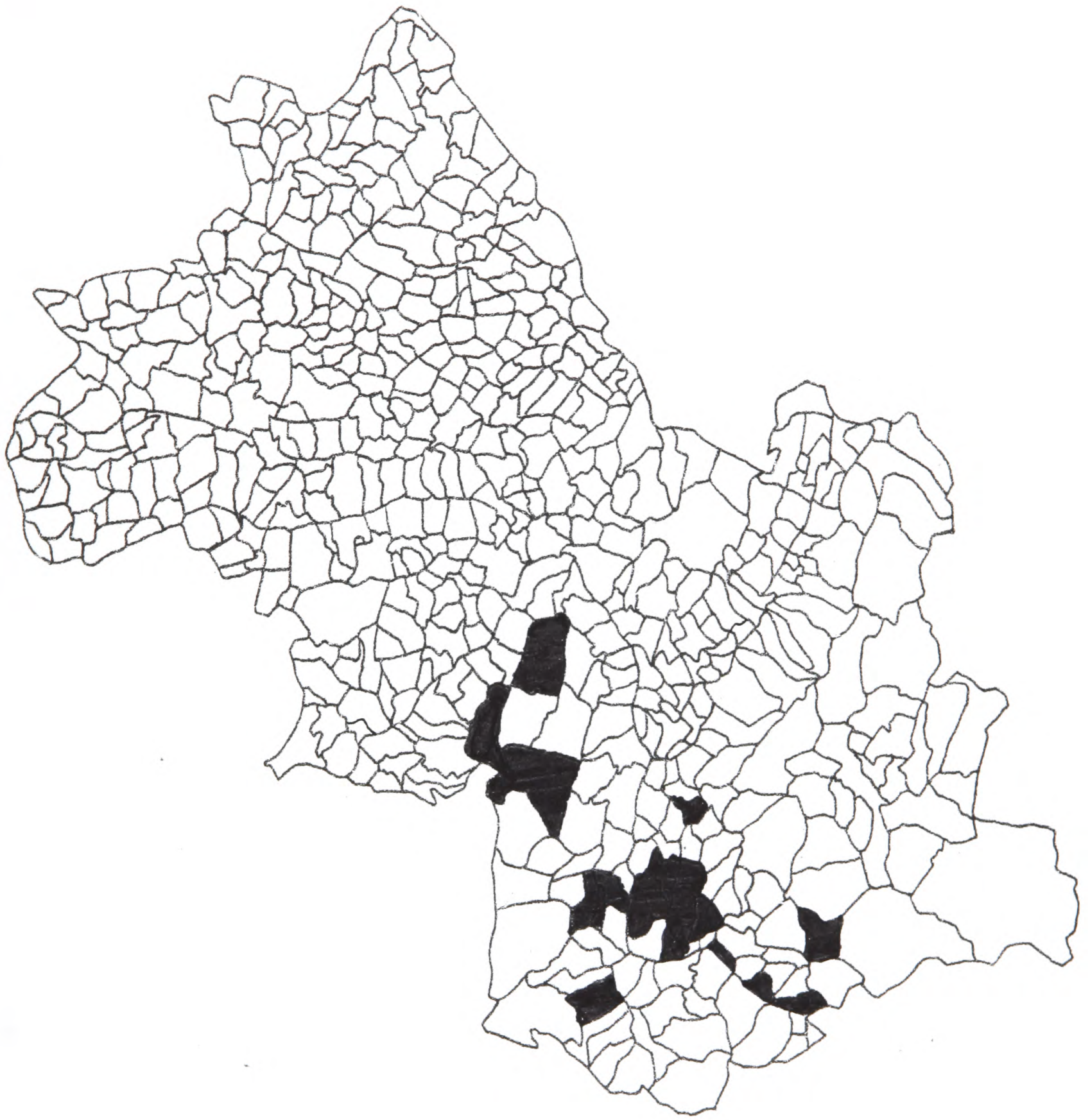
consists of communes:

Autrans
Clelles
Corps
Entraigues
Laffrey
Marcieu
Monestier de Clermont
Monteynard
La Motte d'Aveillans
La Motte St. Martin
La Mure
Pierre Chatel
Prunieres
Quet en Beaumont
Rencurel
St. Arey
St. Paul les Monestier
St.Pierre de Mearoz
Sinard
Sousville
Susville
Villard de Lans

Characteristics:

high emigration	2.80% per annum
high altitude	521m - 1000 m
low owner-occupation	less than 60%
low and normal proportion of male population	

Fig. 6.11 Group 8



Group 9

consists of communes:-

Ambel

Avignonet

Engins

Livet et Gavet

Malleval

Mizöen

St. Hilaire du Touvet

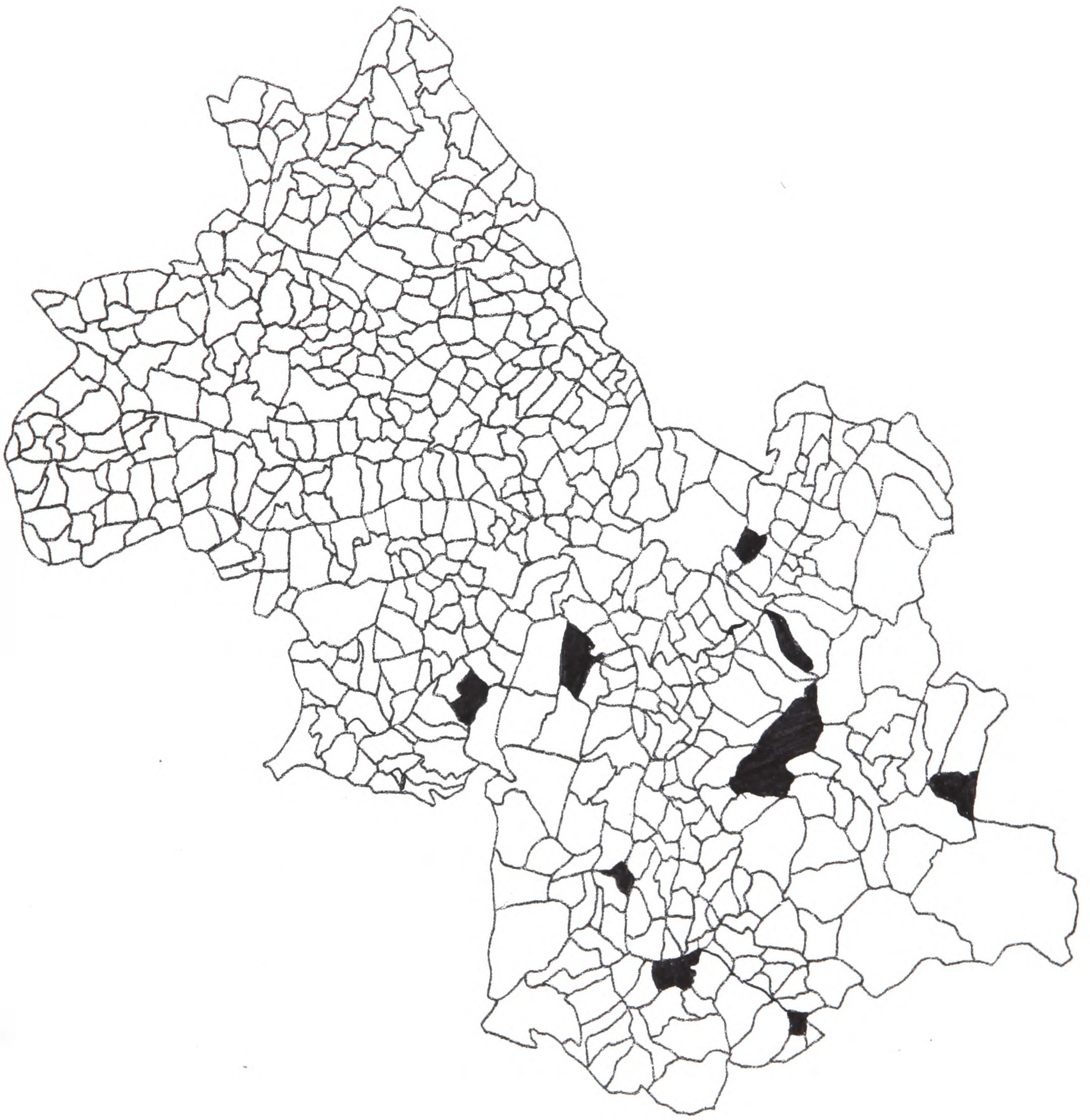
St. Jean d'Hérans

St. Mury Monteymond

Characteristics:

very high emigration	5.97% per annum
very high altitude	521m - 1000 m
low proportion of houses owned	less than 60%
high proportion of male occupants	up to 63%

Fig. 6.12 Group 9



Group 14

consists of communes:-

Clavans en Haut Oisans

Cognet

Cotes de Corps

Hurtieres

Le Moutaret

Oris en Rattier

Presles

Revel

St. Andeol

St. Martin de la Cluse

St. Michel en Beaumont

La Salette Fallavaux

La Valette

Villard Reculas

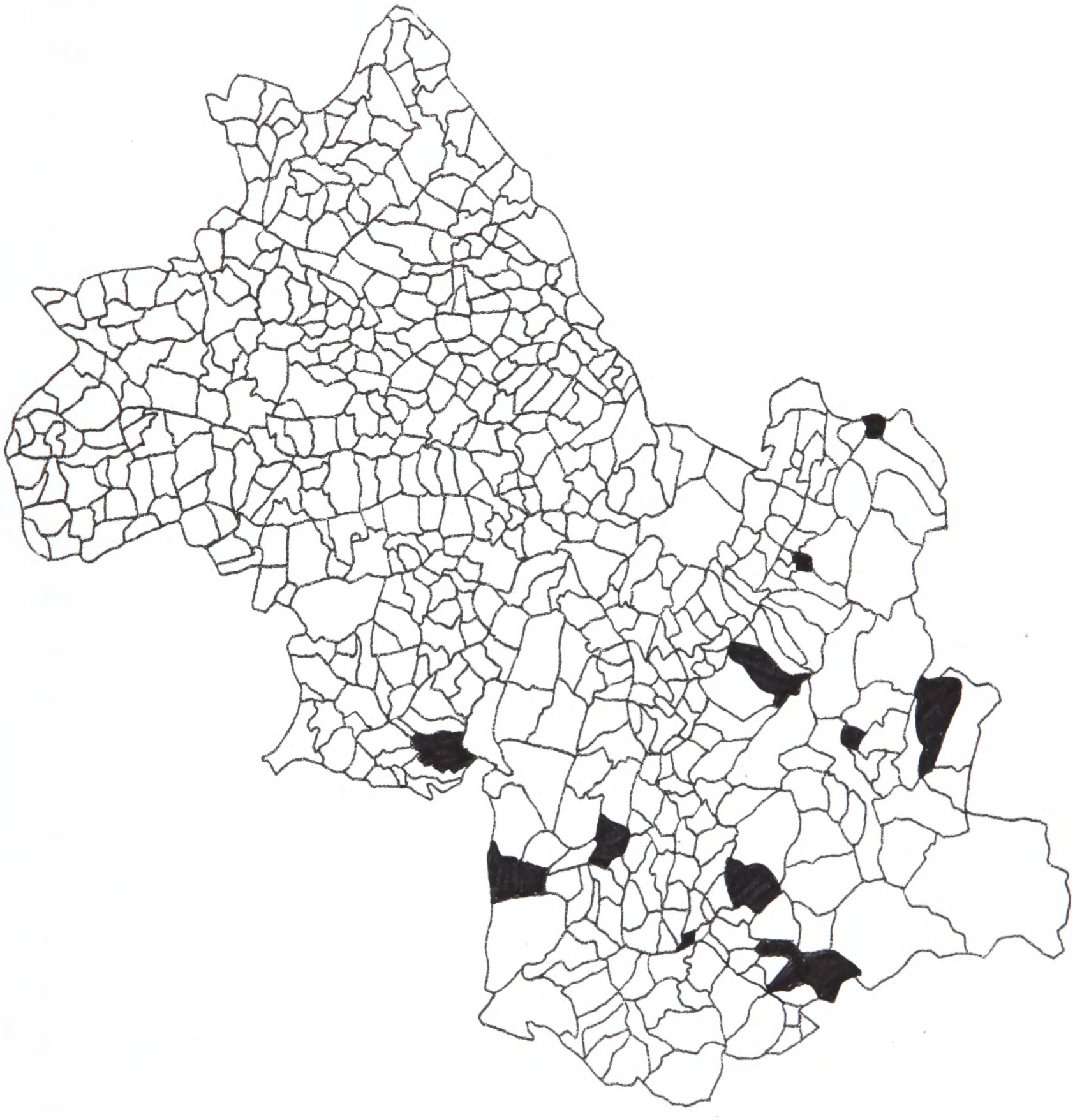
Characteristics:

very high emigration	3.99%	per annum
very high altitude	>521	m
high owner occupation	>60%	
very little cereal production	<10%	agricultural land
very poor housing amenities	<12%	houses with w.c.

>greater than

<less than

Fig. 6.13 Group 14



had less than 12% of their housing with proper modern sanitation, an incredibly low proportion for such recent years. It is noticeable that the rate of outmigration from areas with such poor facilities is the second highest in Isère. However, these communes have an average population size in 1962 of 111[1] such that the loss of only a small number of people meant a great percentage difference (e.g. Côtes-de-Corps with a population of 119 in 1902 and 87 in 1968 had an annual rate of loss of 5.10% of which 4.78% was attributable to migration). This commune, as its name suggests, juxtaposes the cantonal capital of Corps which has an amenity level of 65%, compared to less than 30% of houses in Côtes-de-Corps with sanitation. Thus there existed in 1962 great variations in amenities over a short distance: the difference between a larger more urban commune with a certain status, and an adjoining rural commune.

Group 15 (Fig. 6.14) consists of the high agricultural-pastoral communes where amenity levels range upwards from 12 to 70%. In many cases these are the remotest communes, difficult of road access, in the extremities of the Oisans, Taillefer and Chartreuse. These areas of high steep and difficult terrain can grow few arable crops and concentrate on extensive rearing of sheep and cattle with some trans-humant activity particularly in the Gresse. Their

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[1] In 1975 average population of this group was 99.

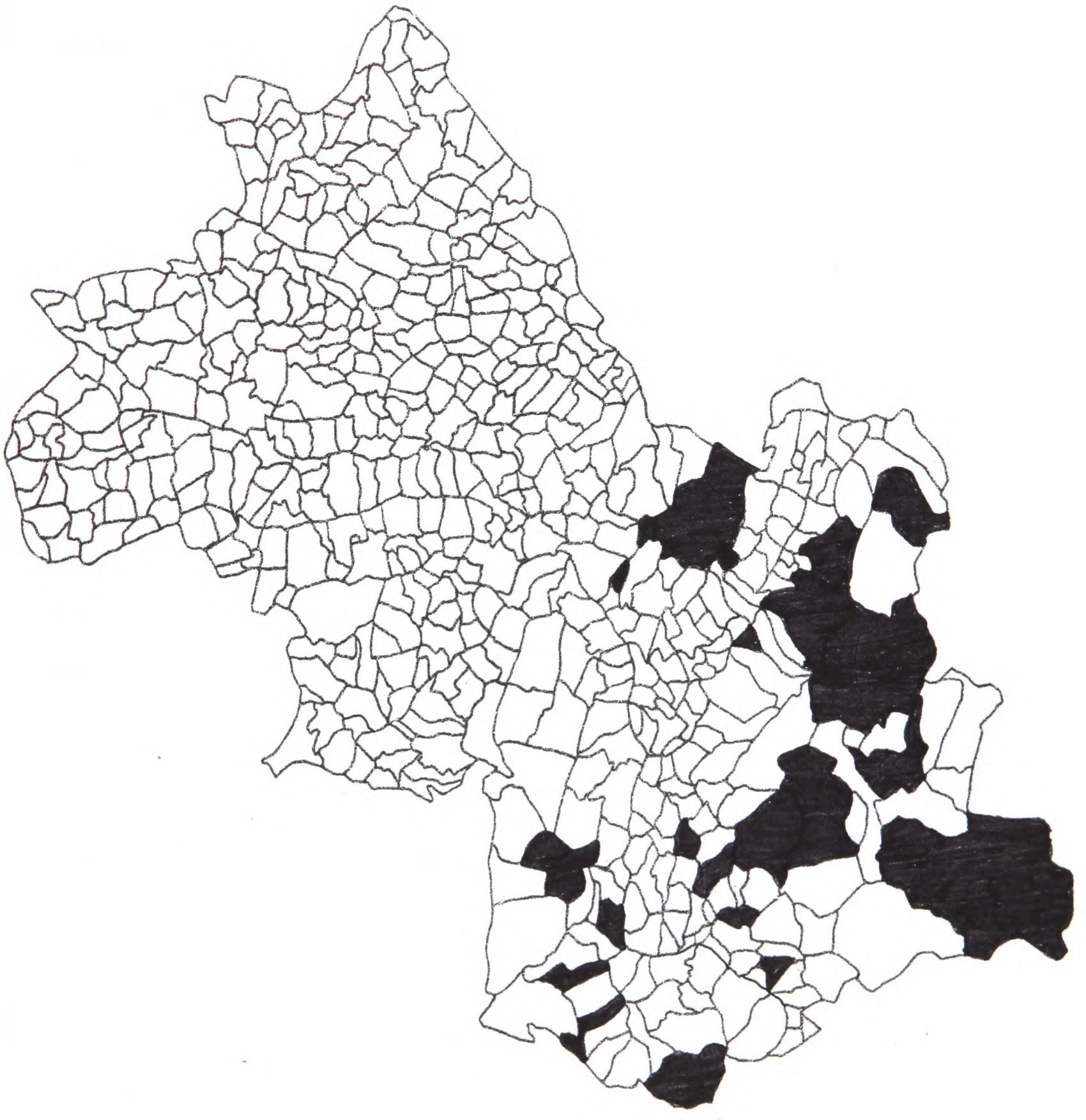
Group 15 consists of communes:

Les Adrets
Allemond
Auris
Chantelouve
Château Bernard
Le Freney d'Oisans
La Gardé
Laval
Lavaldens
Miribel Lanchâtre
Mont St. Martin
Ornon
Oulles
Oz
Percy
Pinsot
Ste. Agnes
St. Christophe en Oisans
St. Guillaume
St. Honore
St. Luce
St. Martin de Clelles
St. Pancrasse
St. Pierre d'Entremont
St. Pierre de Chartreuse
St. Théoffrey
Sievoz
Theys
Treffort
Treminis
Vaujany
Venosc
Villard Reymond

Characteristics:

High emigration	2.28% per annum
very high altitude	>521 m
high proportion owner-occupied houses	>60%
low proportion cereals	<9%
more houses with w.c.	12-70% with w.c.

Fig. 6.14 Group 15



agricultural potential is severely limited, and other employment is not attracted to such remote areas. It was from these communes that the packmen used to travel to provide some income in the long winter months. The present solution is out-migration to areas of greater potential and more accessible location, relieving the almost unbearable population pressure on limited resources.

Group 11 (high altitude, high emigration, owner-occupation, cereals > 10%) is split into groups 26 and 27 on the basis of overcrowding (persons per room). These are thus the high altitude agricultural areas with a greater proportion of arable production. Group 26 (Fig.6.15) consists of only six communes with a very low density of persons per room and with the lowest rate of out-migration (0.70% p.a.) of those sub-groups which have split from group 3.

Group 27 (Fig.6.16) has a higher rate of out-migration and is made up of the communes of the Terres Froides and of the Upper Drac and the intermontane basins and plateaux of the Gresse and the Beaumont; which are considerably flatter and more amenable to arable agriculture than most of the Alpine area of Isère.

Thus the high altitude/high emigration group ends as six final groups differentiated on the basis of housing tenure, agricultural specialisation, housing amenities and sex ratio. The other main group 2 (low altitude/low

Group 26

consists of communes:-

Lavars

Mens

Monestier du Percy

Montferrat

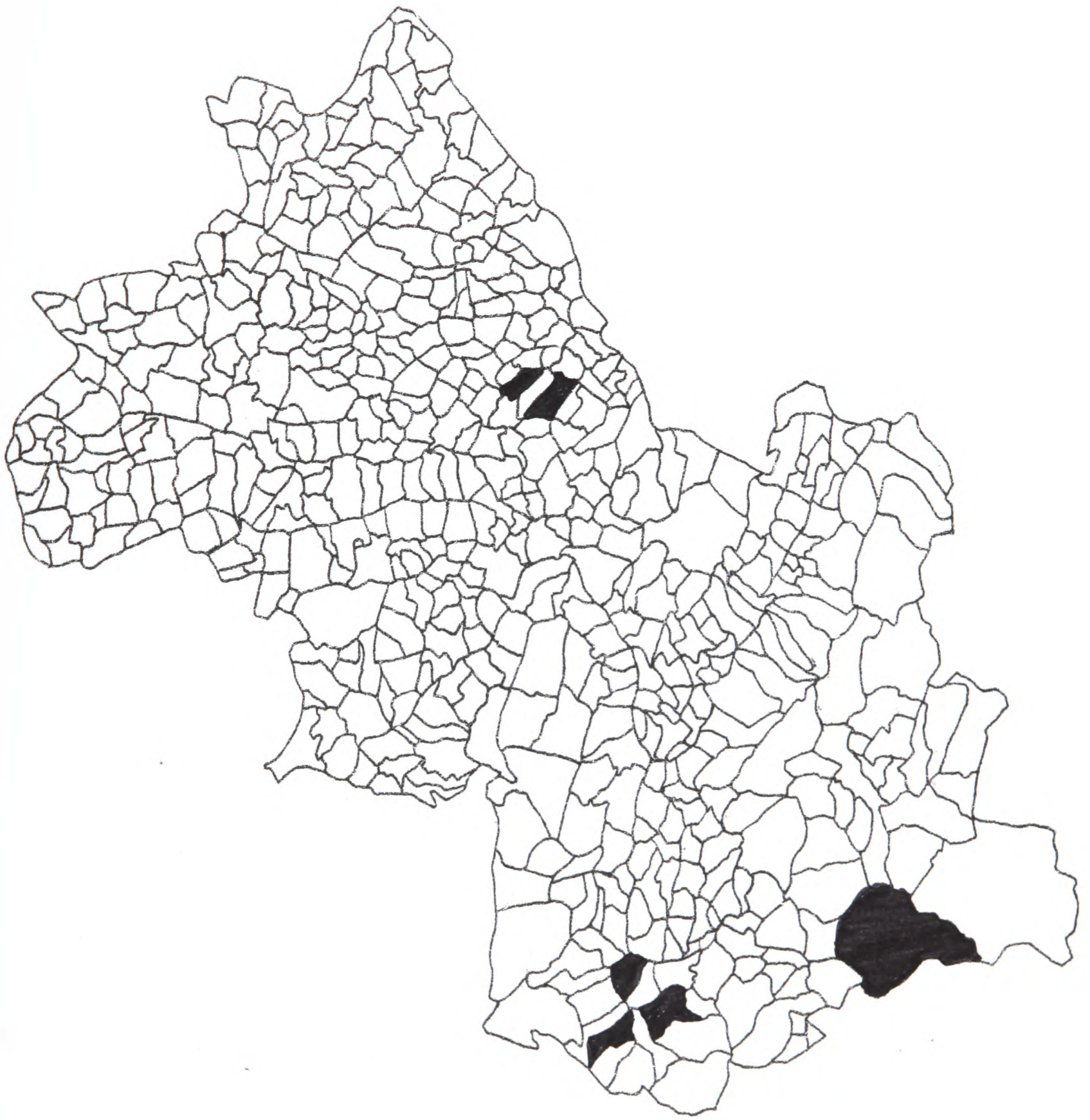
Valencogne

Valjouffrey

Characteristics:

low emigration	0.70% per annum
few persons per room	<0.75 persons per room
medium to high cereal prod'n	9-47% agricultural land
high owner-occupation	>60%
very high altitude	521m - 1000m

Fig. 6.15 Group 26



Group 27

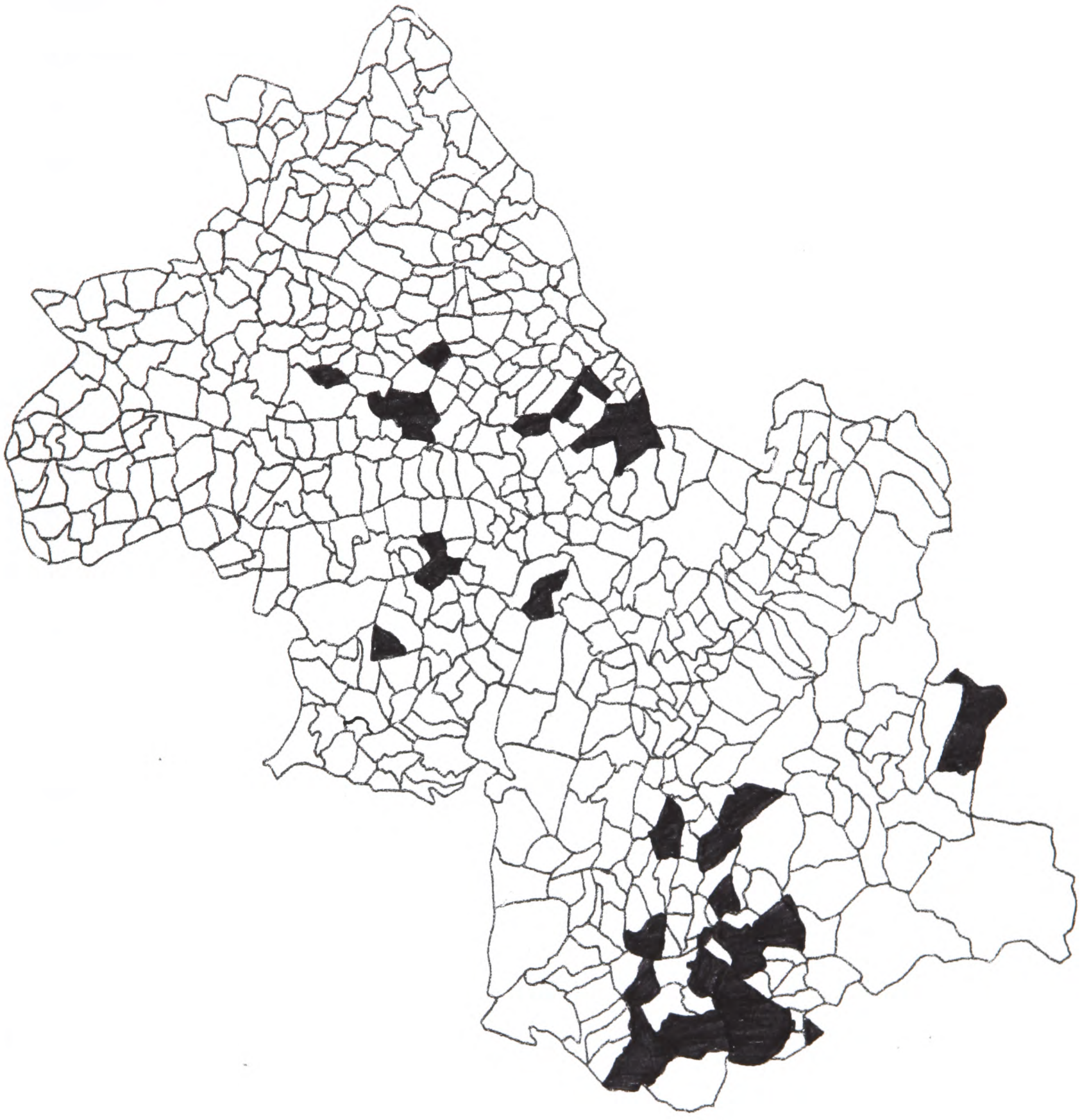
consists of communes:-

Beaufin
Belmont
Besse
Bilieu
Bizonnes
Cordéac
Cornillon en Trièves
Flachères
La Forteresse
Lalley
Mayres-Savel
Merlas
Miribel les Echelles
Montaud
La Morte
Murinais
Nantes en Rattier
Notre Dame de Vaux
Pellafol
Plan
Ponsonnas
Prebois
Quincieu
St. Anne sur Gervonde
St. Baudille et Pipet
St. Didier de Bizonnes
St. Jean de Vaulx
St. Jean le Vieux
St. Laurent en Beaumont
St. Sebastien
St. Sulpice des Rivoires
La Salle en Beaumont
Torchefelon
Valbonnais
Velanne
Villard St. Christophe

Characteristics:

average emigration	1.71% per annum
very high altitude	>521 m
high proportion owner-occupied houses	>60%
medium and high proportion cereals	9-47% agricultural land
medium and high rates of overcrowding	0.80 persons per room - 1.76

Fig. 6.16 Group 27



emigration) separates into 12 final groups on the basis of up to five additional criteria. The next split after altitude defines Group 2 into Groups 6 and 7 on the basis of overcrowding (persons per room). Both of these groups are then split on the proportion of young people in the population, although the splits occur in different places within the age variable.

The various final groups are presented in the following sequence of maps. Group 13 (Fig.6.17) is the first final group to emerge from the low altitude/low emigration group. It has the highest rate of emigration from the 'Group 2' groups, indeed comparable to some of the final 'Group 3' groups. It is a classic case of population pressure: with a very high proportion of young people (over 37%) and physical overcrowding. In some cases out-migration follows as a logical consequence of movements for employment (e.g. from St. Hilaire de Brens to Crémieu or from Serpaize to Vienne) (personal communication).

From group 12 stem four final groups each suffering from overcrowding but with a low or normal proportion of young people. They split into two main groups on the basis of dependence on agricultural employment. Those very dependent on agriculture (over 68% active population) consist of groups 20 and 21. Group 21 (Fig. 6.18) has a significant level of market gardening while group 20

Group 13

consists of communes:

Bonnefamille

Chassignieu

Chèzeneuve

Combe de Lancey

Jarrie

Lentiol

Leyrieu

Meyrié

Murianette

Notre Dame de Commiers

St. Alban du Rhône

St. Clair sur Galaure

St. Hilaire de Brens

St. Romain de Surieu

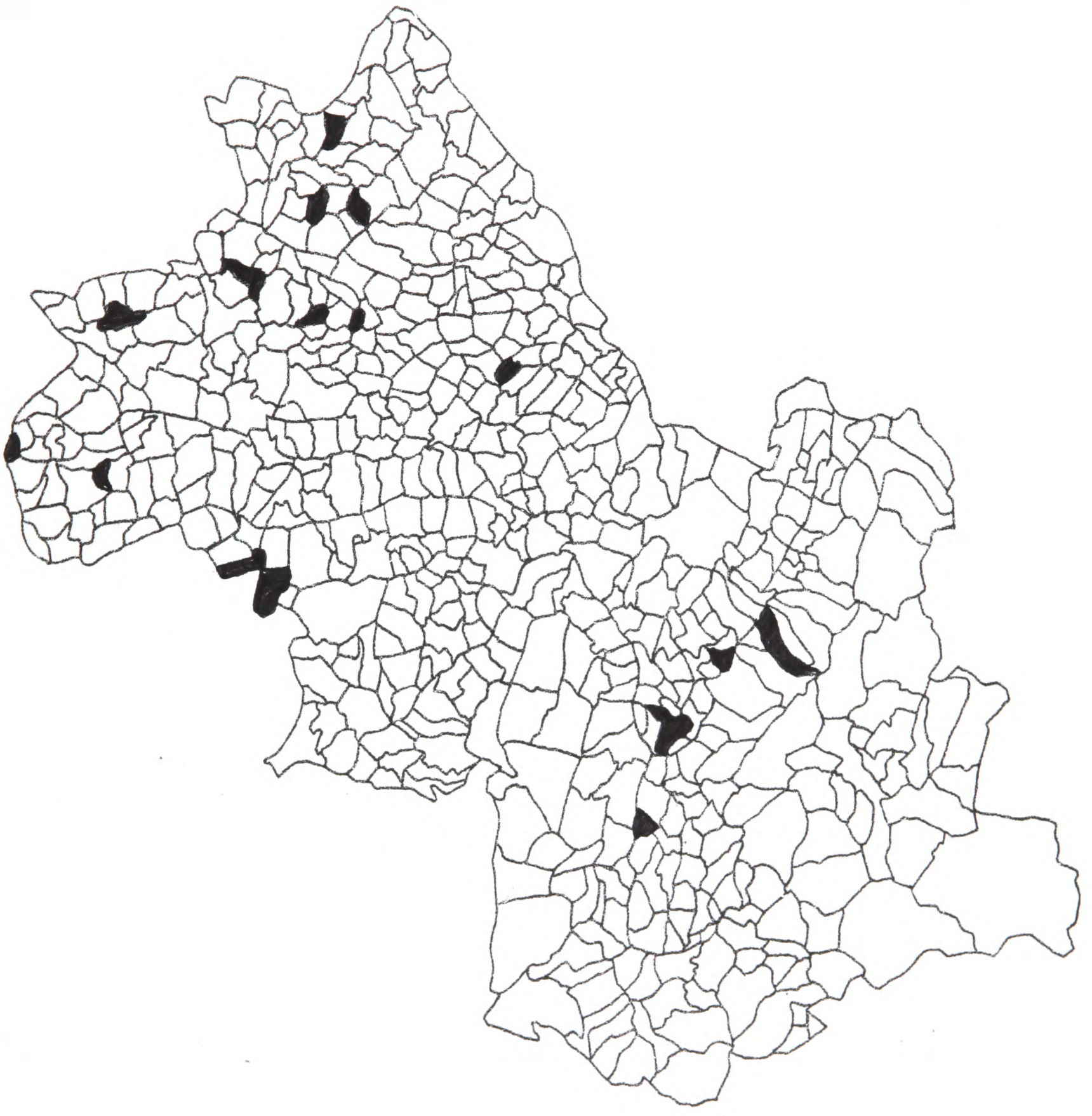
Serpaize

Veyssilieu

Characteristics:

high emigration	2.54% per annum
low to medium altitude	under 521 m
overcrowding	> 1 person per room
very h igh proportion young people	>37%

Fig. **6.17** Group **13**



Group 21

consits of communes:-

Arzay

Beauvoir de Marc

Bessins

Bassieu

Bougé-Chambalud

Chevrières

Crémieu

Marcollin

Montagne

Pisieu

Royas

St. Antoine

St. Bonnet de Chavagne

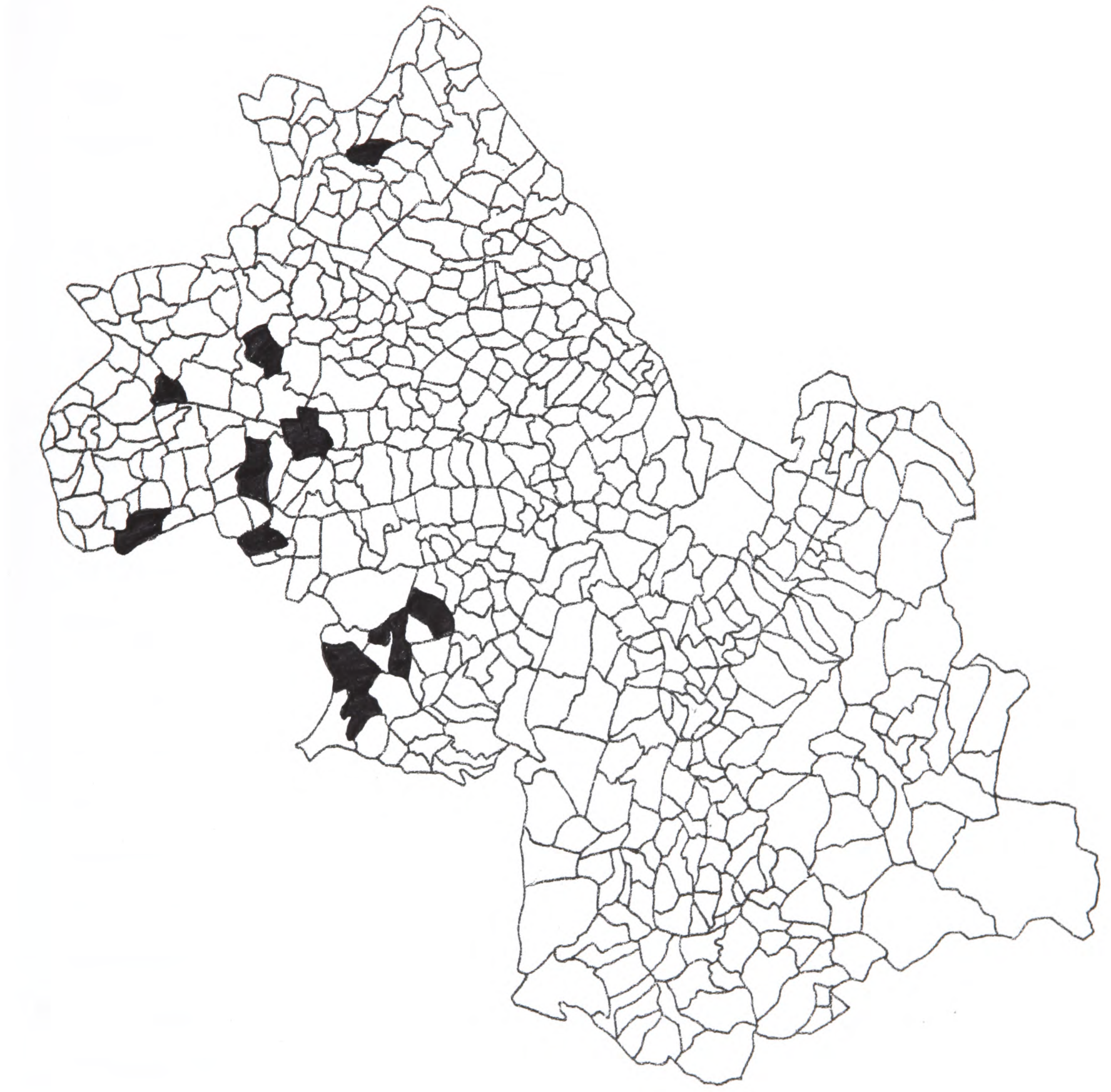
St. Sorlin de Vienne

Varacieux

Characteristics:

low emigration	1.18% per annum
low to medium altitude	<521 m
high overcrowding	>0.93 persons per room
low & medium number of young people	under 37% aged 0-19 years
high agricultural employment	over 65% in agriculture
high market gardening	over ½%

Fig. **6.18** Group **21**



(Fig. 6.19) has general agriculture, consisting of parts of the traditional peasant areas of the Chambaran and Bonnevaux.

The 'overcrowded' communes with low levels of agricultural employment are differentiated solely on the basis of distance from the large cities. Group 24 (Fig. 6.20) is a small group of communes chiefly of the Gresivaudan and Lower Drac, with relatively high levels of out-movement. Group 25 (Fig.6.21) is a much larger group of less agricultural communes in the mid-way zone between the attraction of Lyon and Grenoble. Group 25 may be compared with group 33, again the key variable being the rate of overcrowding. These 'overcrowded' communes in many cases correspond to areas of old building with a high proportion of housing built pre-1914.

Stemming from Group 6 (low overcrowding) are a number of final groups. One branch is via Group 19 (high proportion of young people). This is a distinctive combination of lack of overcrowding, a high proportion of young people and yet low migration, despite the youthful population with a propensity to migrate. In these communes of Group 28 (Fig.6.22) all communes except two have an excess of natural growth, compensating in many cases for the loss by out-migration. This relatively healthy position may be accounted for by their changing status from rural to suburban communes and because of the availability of

Group 20

consists of communes:

Balbins

Chalons

Chapelle de Surieu

Châtelus

Cour et Buis

Cras

Dionay

Lieudieu

Penol

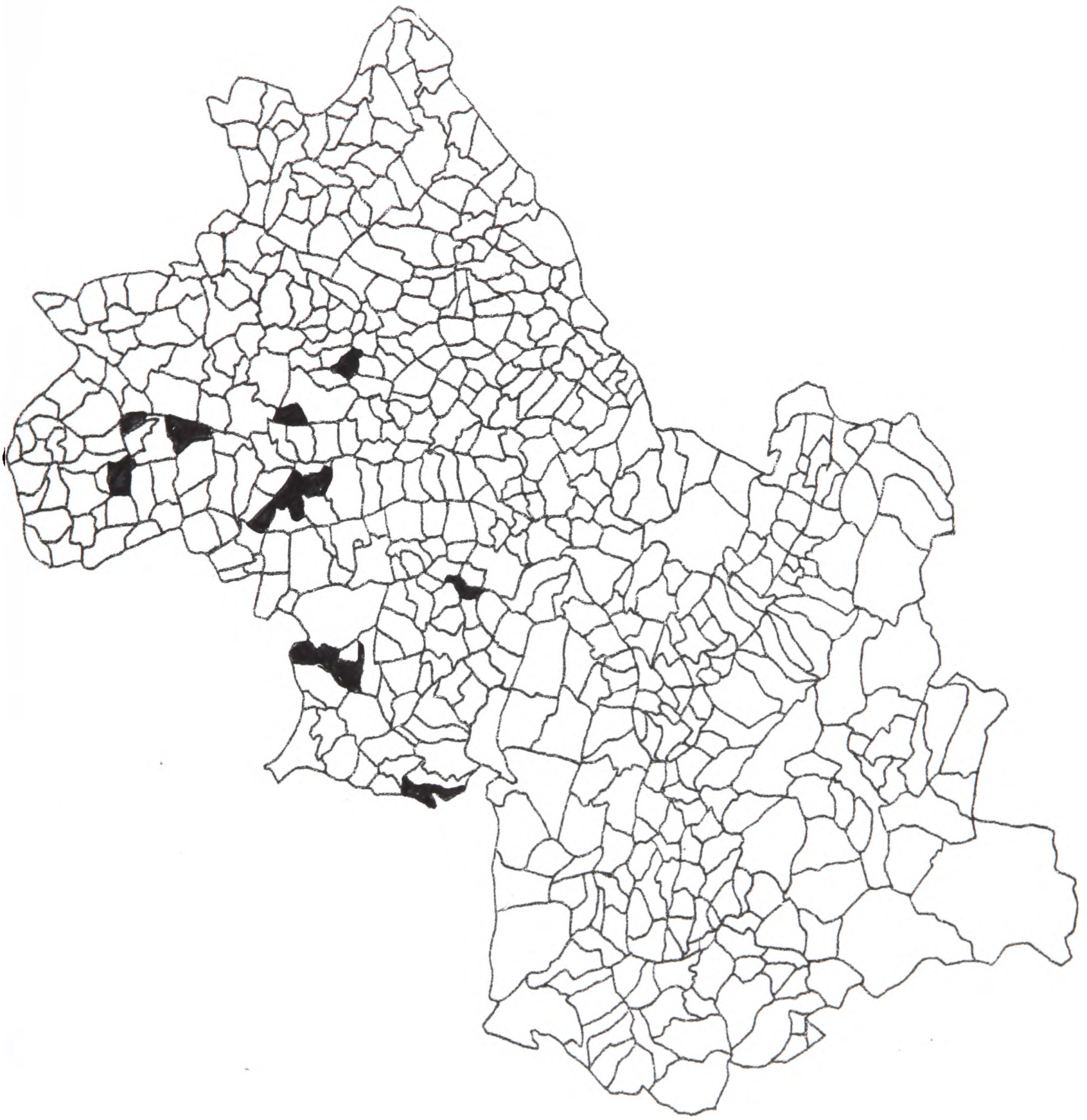
St. Appolinard

Tramolé

Characteristics:

medium emigration	2.55% per annum
low to medium altitude	<521 m
high overcrowding	>0.93 persons per room
low & medium number of young people	under 37% 0-19 years
high agricultural employment	over 68% in agriculture
little market gardening	under ½% agricultural land

Fig. 6.19 Group 20



Group 24

consists of communes:

La Buisse

Champ-près-Froges

Chasse-sur-Rhône

Le Gua

Notre Dame de Mésage

St. Georges de Commiers

La Terrasse

Valencin

Varces Allières et Risset

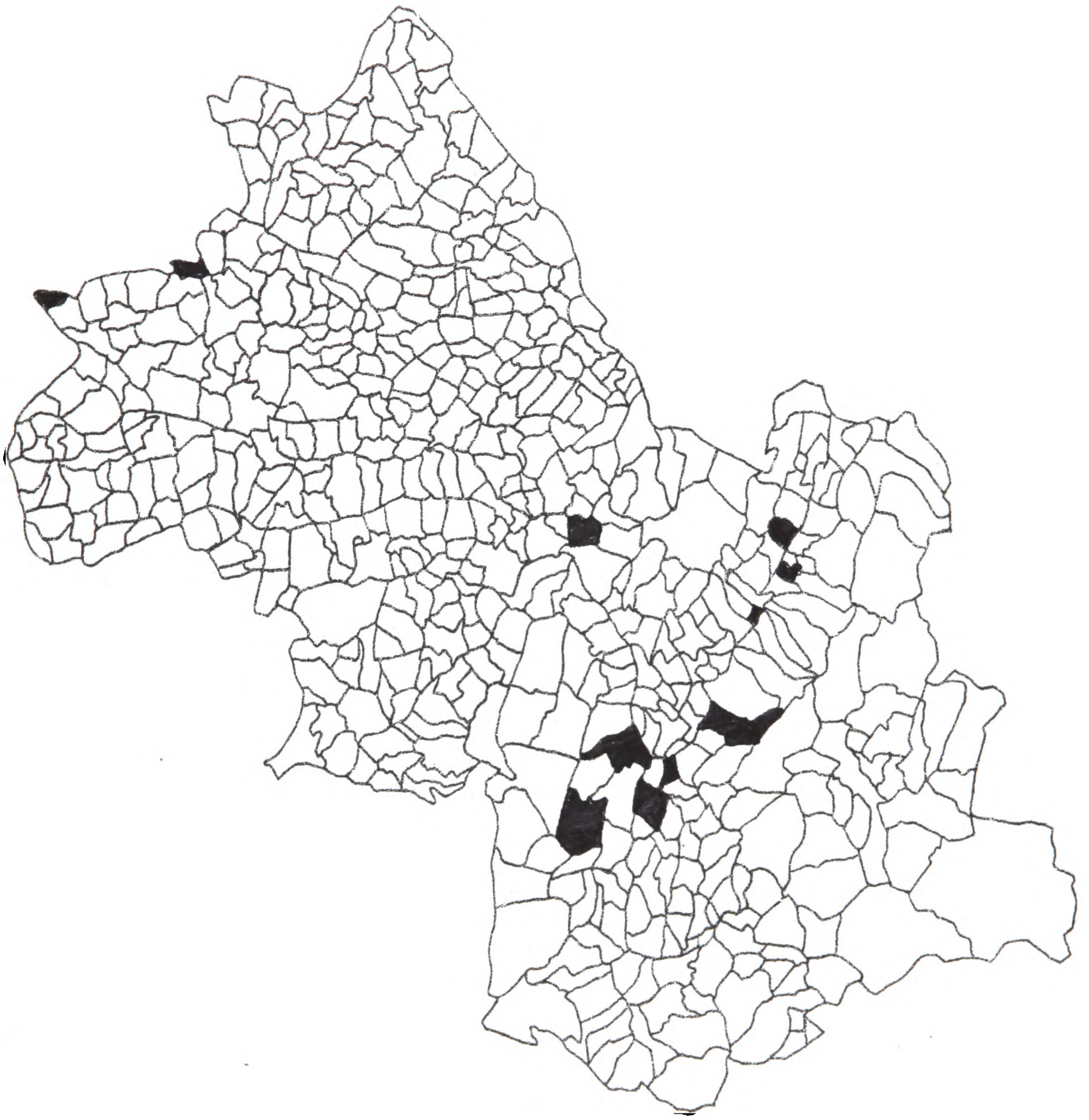
Vaulnaveys le Bas

Villard Bonnot

Characteristics:

medium emigration	1.74% per annum
low-medium altitude	under 521 m
high overcrowding	over 0.93 persons per room
low & medium number of young people	under 37% aged 0-19 years
low agricultural employment	under 63%
low distance	under 25 km. from large city of over 500,000 people

Fig. 6.20 Group 24



Group 25

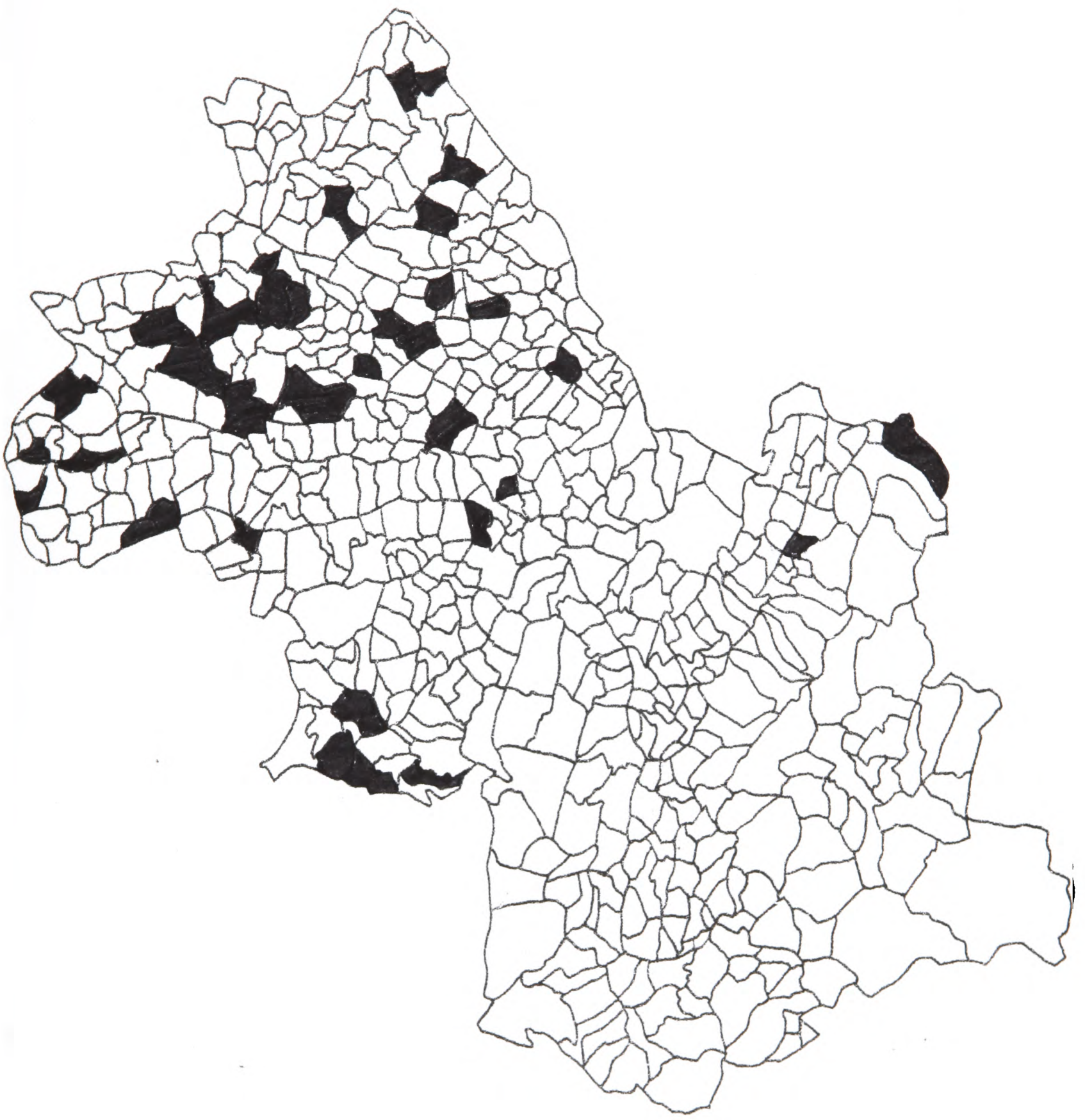
consists of communes:

Arandon
Assieu
Auberives-en-Royans
Badinières
Bâtie-Divisin
Beaucroissant
Beaufort
Chabons
Chapelle du Bard
Charette
Chatonnay
Chatte
Choranche
Clonas sur Varèze
Four
Jarcieu
Moidieu-Detourbe
Montalieu-Vercieu
Moras
Pact
Péage de Roussillon
Reventin-Vaugris
Roche
Rochetoirin
St. Blaise du Buis
St. Clair de la Tour
St. Georges d'Espéranche
St. Hilaire du Rosier
St. Just de Claix
St. Victor de Cessieu
Savas Mépin
Septème
Serezin de la Tour
Sermerieu
Tencin
Vénérieu
Villefontaine
Villeneuve de Mare

Characteristics:

low emigration	0.91% per annum
low-medium altitude	under 521 m
high overcrowding	over 0.93 persons per room
low & medium number of young people	under 37% 0-19 years
low agricultural employment	under 63%
high distances	25-75 km. from large city

Fig. 6.21 Group 25



Group 28

consists of communes:

Charavines

Herbeys

Lumbin

Morêtel de Mailles

Polienas

St. Agnin sur Bien

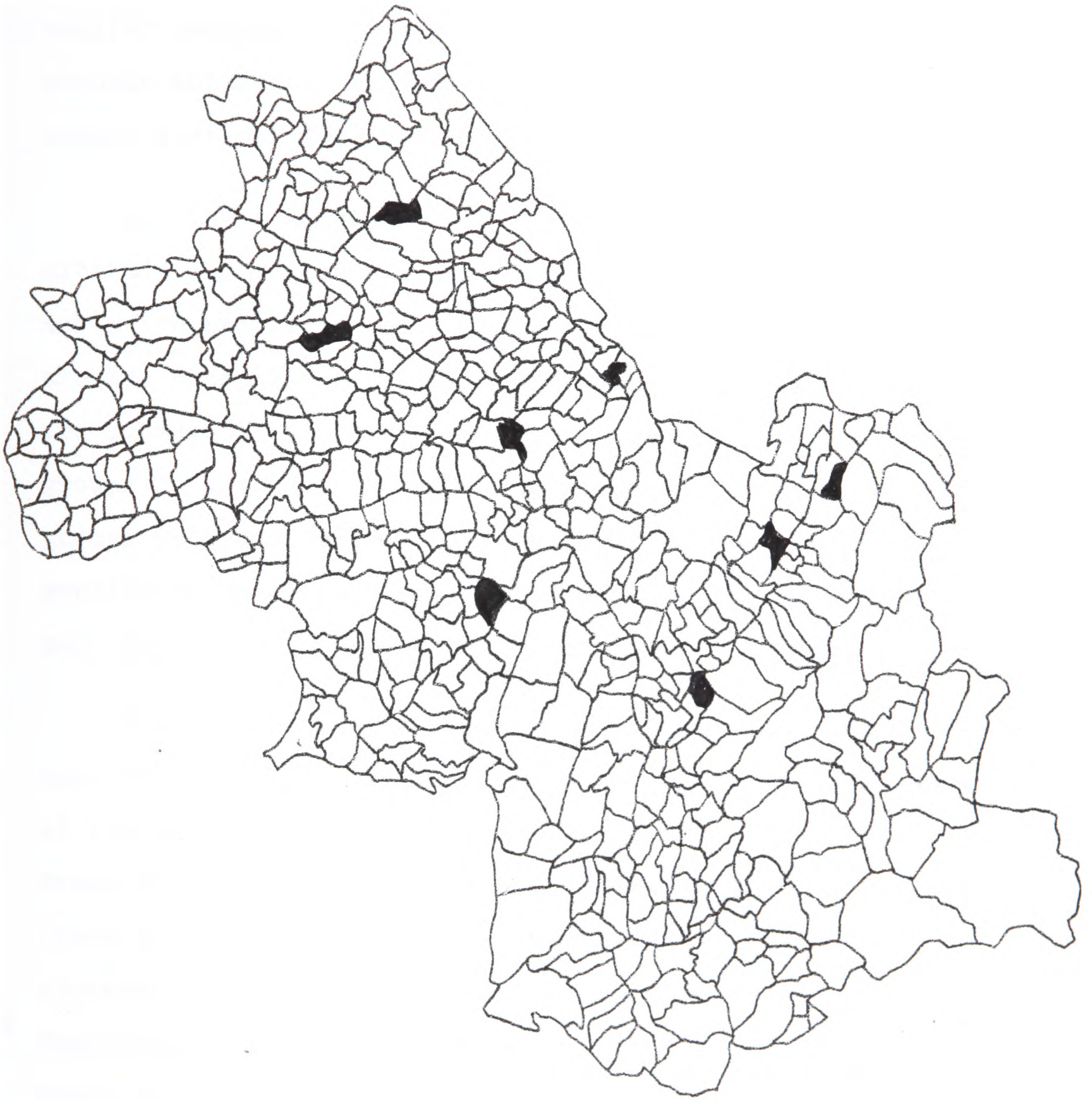
St. Martin de Vaulserre

Salagnon

Characteristics:

low emigration	0.78% per annum
low/medium altitude	<521 m
low overcrowding	under 0.93 persons per room
high number of young people	over 34% 0-19 years
medium-low distance from city	under 47 km.

Fig. 6.22 Group 28



housing for population commuting to nearby cantonal capitals.

On the other hand group 29 (Fig.6.23) contains smaller communes with a similar but rather poorer demographic situation; exhibiting higher emigration at a higher distance from the major cities.

All the remaining groups stem from Group 18; low altitude and low emigration, low level of overcrowding and a low proportion of young people. These are the already depopulated communes of the Bas-Dauphiné. They are subsequently divided by population density to form groups 22 and 23. The most depopulated of these lowland groups is group 30 (Fig.6.24) with an excessively low population density (less than 36 persons/km²) and a low male population. This group contains only 5 communes.

The depopulated communes with an average or high male population divide into groups 34 and 35 on the basis of the degree of dependence on agricultural employment. Group 35 (Fig.6.25) is excessively dependent on agriculture (from 63 - 97% of the active population) consisting of clusters of communes on the Plateau de Bonnevaux and the Chambaran, some of the poorest parts of the Bas-Dauphiné. Group 34 (Fig.6.26) with a lesser dependence on agriculture (although in cases up to 63%) consists of communes on the verges of the Chartreuse, Vercors, the Crémieu and Bièvre.

Group 29

consists of communes:

Fitilieu

Meyrieu

Meyssieu les Etangs

Montfalcon

Montrevel

Nantoin

St. André en Royans

St. Blandine

St. Ondras

St. Pierre de Cherennes

Succieu

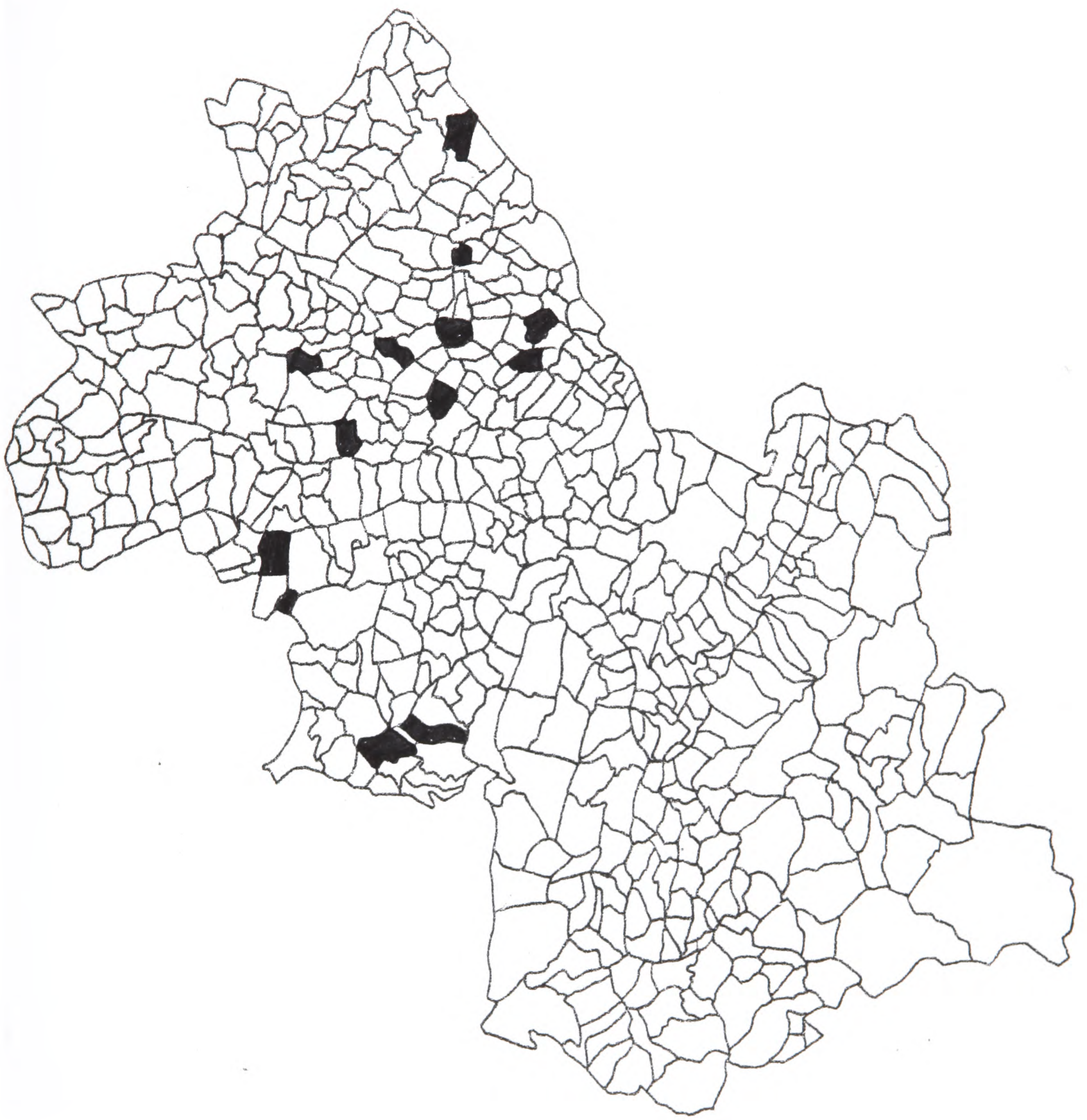
Thodure

Vasselin

Characteristics:

medium emigration	2.18% per annum
low/medium altitude	<521 m
low overcrowding	under 0.93 persons per room
high number of young people	over 34% 0-19 years
high distance from city	over 47 km.

Fig. 6.23 Group 29



Group 30

consists of communes:

Beauvoir en Royans

Mottier

Passins

Rovon

St. Michel de St. Geoirs

Characteristics:

medium emigration	2.01% per annum
low/medium altitude	<521 m
low number of young people	under 34% 0-19 years
low population density	under 36 persons/ km^2
very low male population	under 47%
low overcrowding	

Fig. 6.24 Group 30



Group 35

consists of communes:

Chantesse

Chasselay

Culin

Marnans

Moissieu sur Dolon

Montseveroux

Morette

Nerpol et Serres

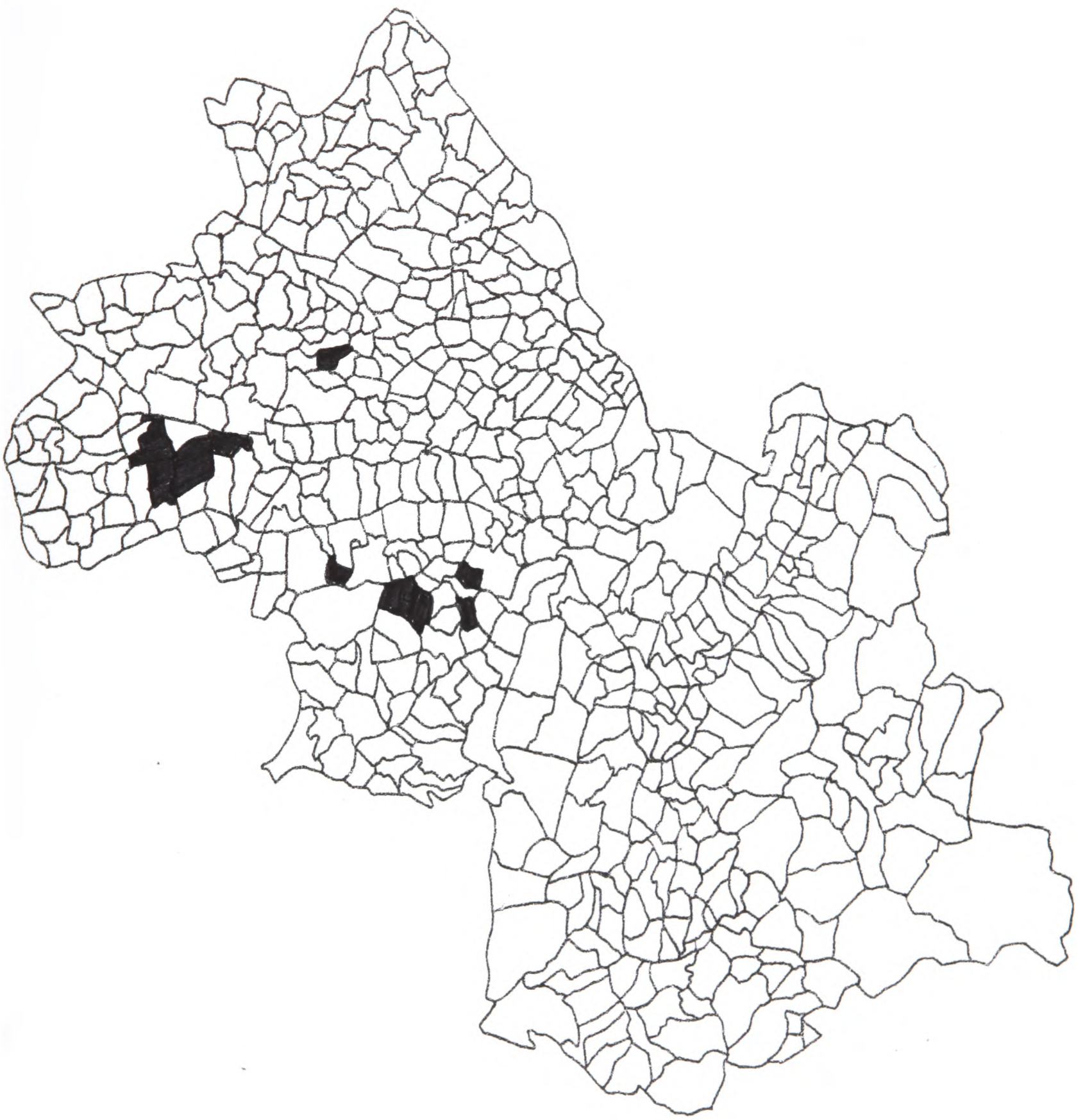
Primarette

St. Julien de l'Herms

Characteristics:

low/medium emigration	1.33% per annum
low/medium altitude	521 m
low number young people	under 34% 0-19 years
low population density	under 36 persons/ km^2
medium/high male population	47-63% male
high agricultural employment	63-97%
low overcrowding	

Fig. 6. 25 Group 35



Group 34

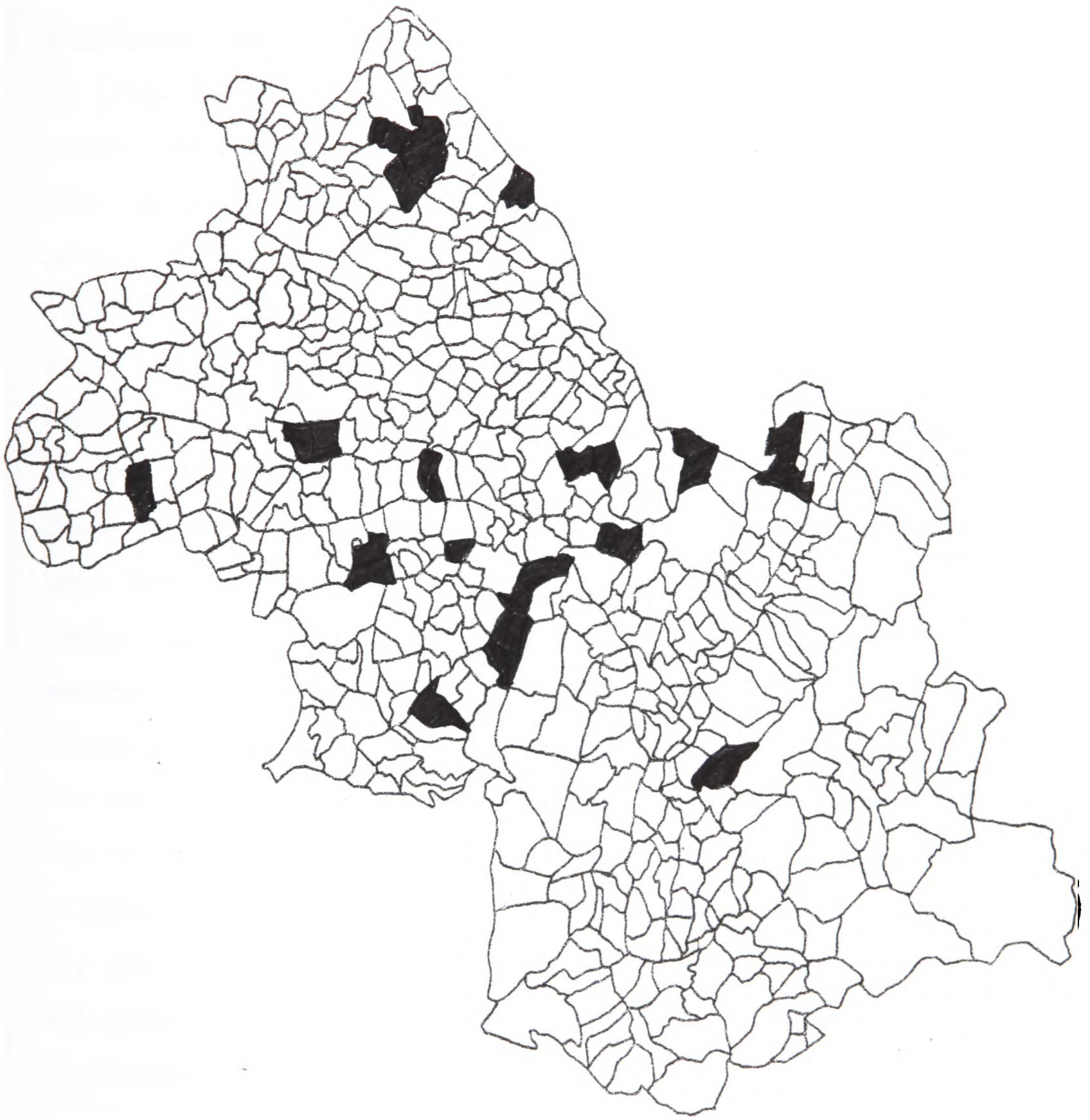
consists of communes:

Bellegarde-Poussieu
Bevenais
Brangues
Commelle
Courtenay
Izeron
Optevoz
Pommiers la Placette
Rivière
St. Aupre
St. Christophe sur Guiers
St. Gervais
St. Nicholas de Macherin
St. Paul d'Izeaux
St. Pierre de Bressieux
St. Quentin sur Isère
St. Vincent de Mercuze - St. Marie du Mont
Sechilienne
Semons
Soleymieu

Characteristics:

low emigration	0.78% per annum
low/medium altitude	<521 m
low number young people	under 34% 0-19 years
low population density	under 36 persons/ km^2
medium/high male population	over 47% - 63%
low/medium agri-cultural employment	under 53%
low overcrowding	

Fig. 6.26 Group 34



The lower dependence on agriculture correlates with a lower rate of out-migration.

The depopulated communes with a higher rate of population density divide into groups 32 (Fig.6.27) and 33 (Fig. 6.28) on the basis of distance from the major city. Both these groups of communes have a low rate of out-migration, less than 1% per annum, but as with groups 28 and 29 the low distance communes have a lower rate of out-migration than those further away from the major cities, suggesting that the nearer communes may benefit slightly from some 'swash' effects of urban growth, whereas the more distant communes in the central Bas-Dauphiné may lose population to both the major cities of Lyon and Grenoble. In both upland and lowland zones isolation from the major urban centres brings about emigration. However, distance is no substitute for a structural explanation of population movement based on its agricultural demographic and socio-economic context. The communes in groups 32 and 28 tend, however, to consist of larger more urban communities than those in groups 29, 33, and 30, 34 and 35. This broader base of population and employment may also have influenced the lower rate of out-migration.

Group 32

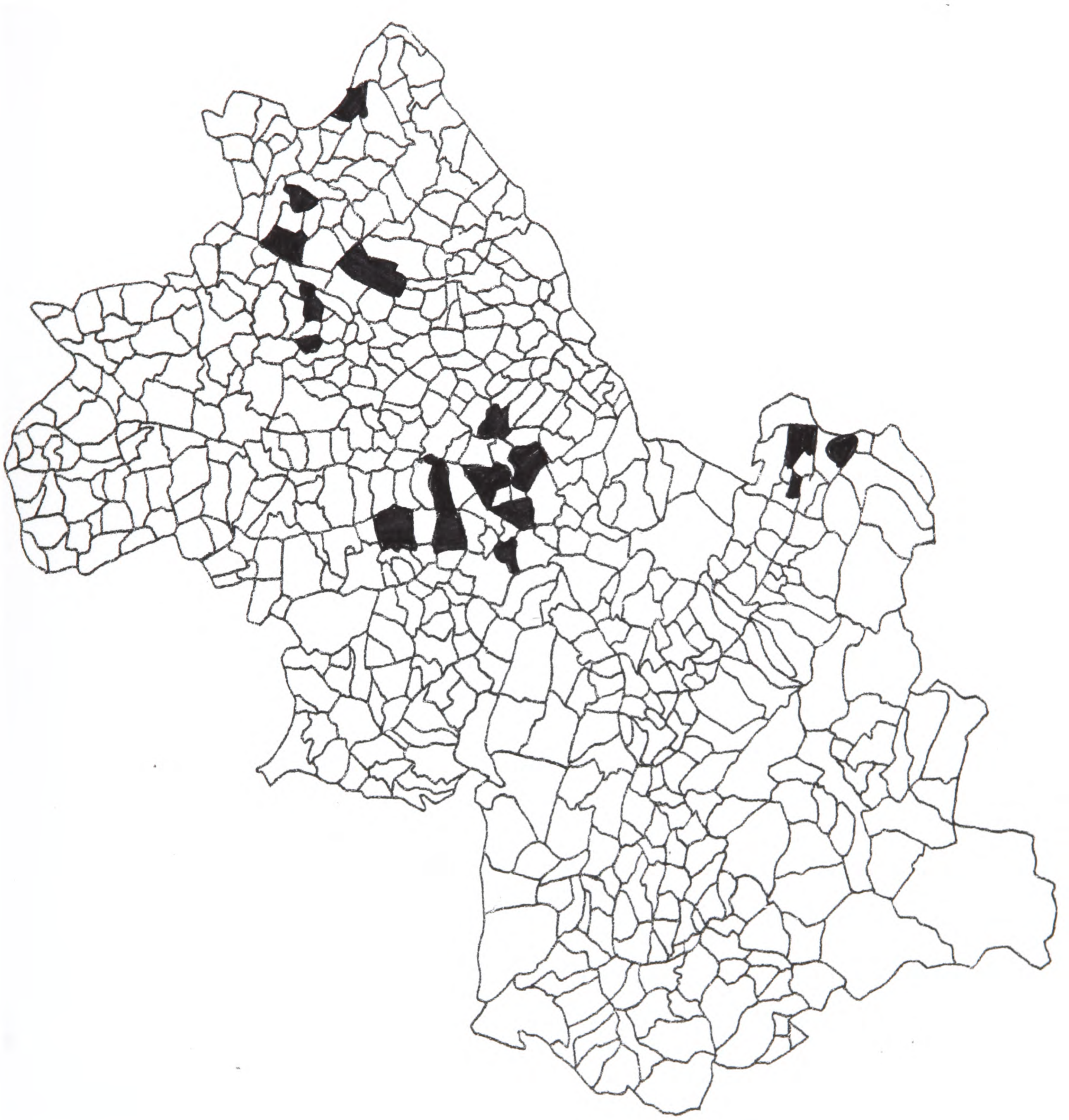
consists of communes:

Apprieu
Barraux
Chirens
Choseau
Crachier
Frontonas
Le Grand Lemps
Hières sur Amby
Izeaux
Le Pin
Réaumont
St. Alban de Roche
St. Cassien
St. Etienne de St. Geoirs
Ste. Marie d'Alloix
St. Maximin
St. Savin
Vourey

Characteristics:

very low emigration	0.38% per annum
low/medium altitude	<521 m
low number young people	under 34% 0-19 years
high population density	36-942 persons/ km^2
low distance from city	under 40 km.
low overcrowding	

Fig. 6.27 Group 32



Group 33

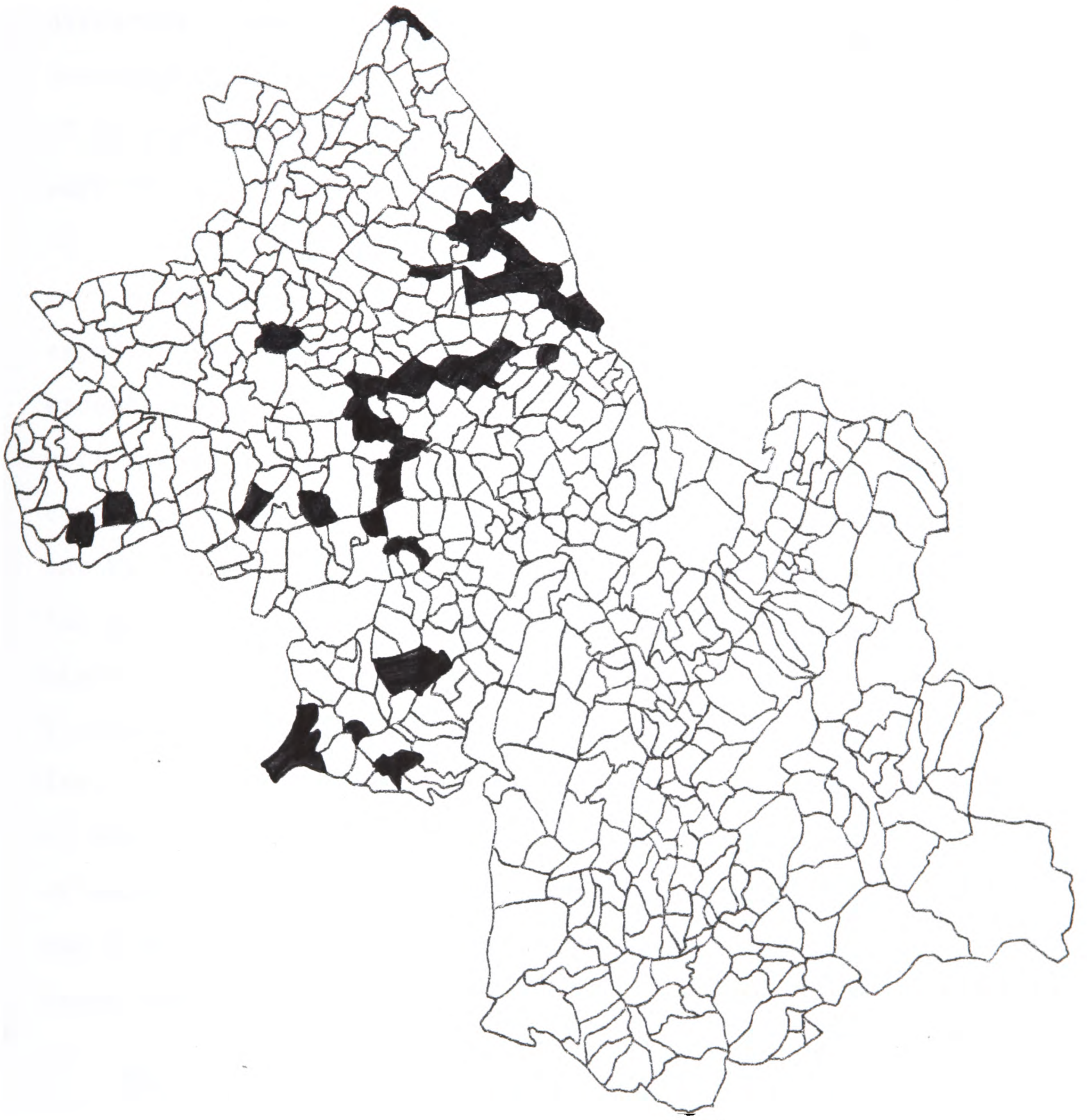
consists of communes:

Agnin
Artas
Beaulieu
Biol
Le Bouchage
Brézins
Champier
Chapelle de la Tour
Charancieu
Chelieu
Chimilin
Corbelin
Doissin
Eclose
Eydoche
Faverges de la Tour
Granieu
Longechenal
Montcarra
Pajay
Panissage
Passage
Pont en Royans
Romagnieu
St. Geoirs
St. Hilaire de la Côte
St. Lattier
St. Sorlin de Morestel
St. Verand
St. Victor de Morestel
Sardieu
La Sône
Sonnay
Teche
Vertrieu
Veyrins-Thuellin
Vézéronce-Curtin

Characteristics:

low emigration	0.80% per annum
low/medium altitude	<521 m
low number young people	under 34% 0-19 years
high population density	36-942 persons/ km^2
high distance from city	40-75 km.

Fig. 6.28 Group 33



6.4 CHARACTERISTICS OF OUTMIGRATION AREAS: CONCLUSIONS

The A.I.D. of the 323 communes in Isère showing out-migration in 1962-68 has produced a categorisation of the different types of areas which have lost population by out-migration. This has been done by evaluation of a mix of factors, considered at a national level in the first part of this thesis. The main factor affecting the rate of outmigration is altitude, the higher communes losing most population. These consist of those Alpine valleys experiencing the decline of heavy industry; the areas of exceptional natural difficulty; and the areas relatively more favoured for agriculture but with appalling social conditions, not merely as measured by housing amenities, but by personal isolation and lack of social services. The group of areas, distinguished by A.I.D., with the highest rate of outmigration loss (Group 9) consists of 9 communes characterised not only by the predominant factor of altitude but also secondly by a low proportion of owner-occupied houses and thirdly by a preponderance of males in the population. Indeed this group of communes has a mean percentage rate of outmigration over three times that of all losing communes.

The low altitude/low emigration areas are more diverse than the upland zones. Amongst them there is evidence both of population pressure and of relict areas, of poor agricultural areas, and of communes which are more

urbanised and industrialised, but which have insufficient relative advantages to hold population overall but which have not lost population to anything like the extent of their counterparts elsewhere. The dual attraction of Lyon and Grenoble has pulled migrants from the central band of the Bas-Dauphiné while communes nearer either city have, in general, experienced less loss, while the neighbouring communes have benefited from rapid suburban growth. The distance factor is, however, of less fundamental importance than altitudinal and environmental considerations, and the importance of a sufficient population threshold has been clearly indicated.
Group 32 containing 18 communes is the group with the lowest level of loss and in achieving that status is helped not only by its lower altitude location but also by factors such as low overcrowding, low numbers of young people and proximity to a major city. Indeed its rate of loss is only .37% per year or nearly twenty times less than the group of highest losing communes.

This variety of outmigration contexts reflects the diversity found within Isère and within France as a whole. It emphasises the continuing influence of the physical environment on human behaviour, especially in terms of the limitations imposed on economic, and particularly agricultural activity. As suggested in the national analysis, however, agriculture appears not to be a dominant factor in the environmental context of outmigration

by the 1960s; it is likely that it was formerly more important in Isère, but there is little statistical data on which to base such an assumption, although much documentary evidence has accumulated (Blanchard 1938-57, Armand 1974, Isère Dept. Ag. Vol.1929). The decline of the agricultural labour force and the recent restructuring and enlarging of farms suggest that there has been substantial out-movement of agricultural labourers, and also of artisans suffering from industrial competition, particularly in the years preceding the Second World War.

Agricultural factors, when they did emerge in the A.I.D., showed that those areas suffering greatest migration loss were those at high altitude where little or no arable agriculture is possible[1]; whereas areas capable of supporting some arable production lost fewer people. Similarly in the lowland areas, those communes with no alternative source of employment (to agriculture) were still losing substantial numbers. However, in areas with a more balanced employment structure areas with more intensive agriculture (particularly market gardening) lost fewer migrants than the areas of polyculture.

The A.I.D. analysis suggested, however, that of more immediate importance than agricultural structure, are levels of amenity, including overcrowding. Poor housing

---

[1] this corresponds to findings at the national level where areas of livestock rearing showed the greatest loss of rural population.

conditions are not conducive to the retention of a modern population, as expectations of improved living standards have spread into the countryside as well as the town. The disparity in living standards between rural and urban areas dates from the post-war period (1946) when urban conditions improved rapidly; and this may be seen in microcosm in Isère e.g. in Corps and Côtes-de-Corps. The presence of better housing nearby would particularly influence young people who were considering setting up a home.

A further factor of importance appears to be the cumulative effect of population history. It is clear that the areas subdivided from Group 6 (low altitude, low outmigration, low overcrowding), as well as those others with unbalanced age and sex distributions have suffered from previous depopulation which becomes progressively worse by affecting the population structure, and less tangibly the morale of the whole community.

Chapter 7. Destination areas: the case of Grenoble

7.0 Introduction

7.1 The growth of Grenoble

7.2 The quartiers of Grenoble

7.3 In-migration to Grenoble

7.4 Reception areas within the city

CHAPTER 7. DESTINATION AREAS: THE CASE OF GRENOBLE

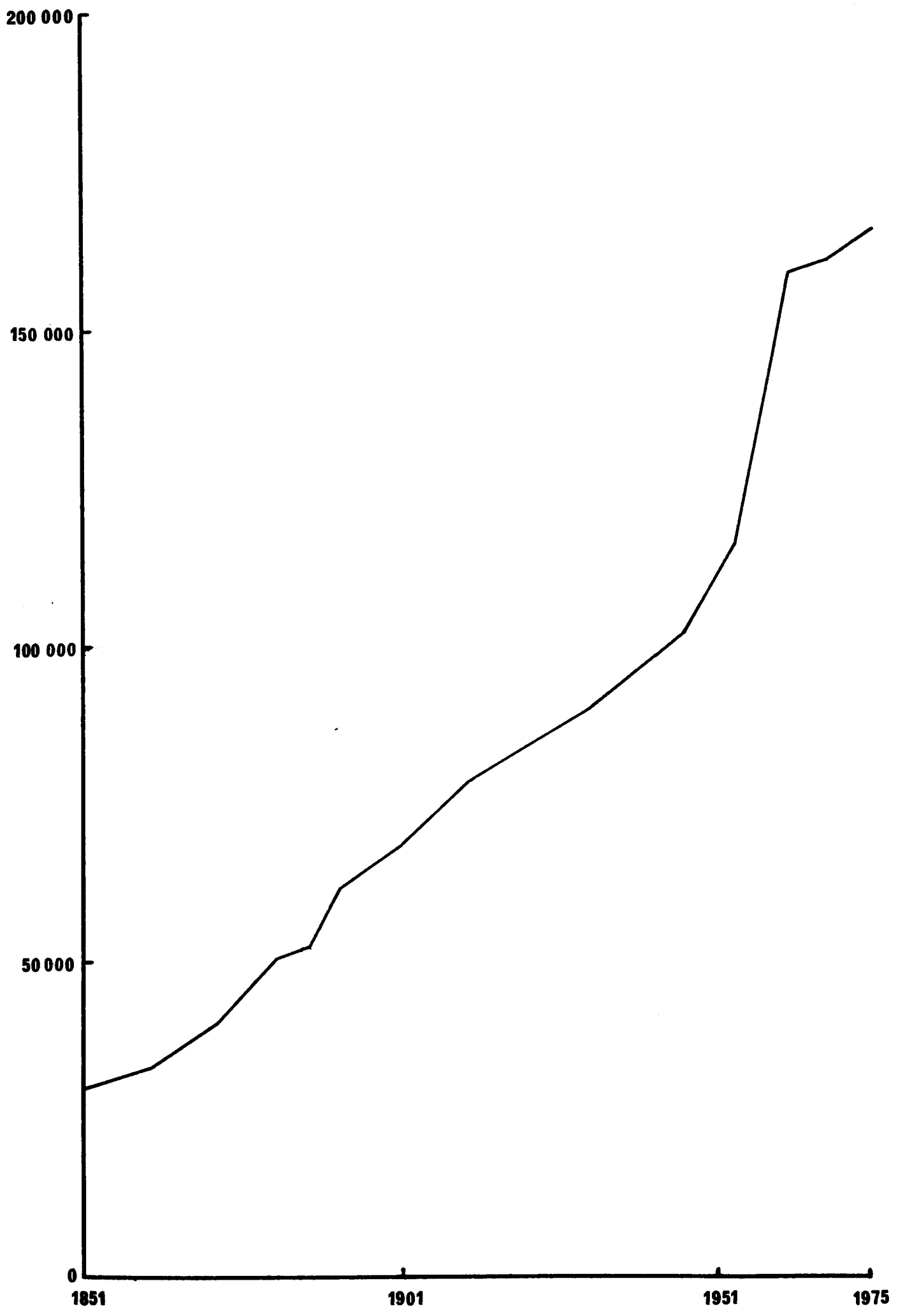
7.0 INTRODUCTION

The previous two chapters have examined the internal diversity of Isère and the changing population distribution since 1891; Chapter 6 has focussed on the areas where population loss has occurred because of outmigration. The present chapter is concerned with the destination areas; those which have gained population. Figs. 5.10 and 6.1 have pinpointed the areas of population gain: they are chiefly the larger communes, with those showing the most spectacular growth being located in the immediate suburbs of the largest towns. Steadier rates of growth have been evident in the more distant suburbs and market towns. Industrial and tourist centres have undergone growth during pre-war and post-war periods respectively.

Within Isère the dominant destination is the department capital, Grenoble. Thus it is Grenoble on which attention is primarily focused in this chapter. The city has witnessed a remarkable growth of population, particularly since 1946, and more particularly since 1954 (Armand 1974). In the period 1954-62 over 31,000 migrants moved into the town while natural growth accounted for an increase of only 10,000. The migration gain is even more notable in the agglomeration and in the outer parts of Grenoble itself.

Fig. 7.1 shows the growth of the population of Grenoble since 1851. It shows steady growth from 1851 to 1911, a slight fall in total population during the first World War, then steady growth until the second World War. It is only after the second World War that the growth of population reaches such dramatic proportions. Since the 1960s the rate of population growth has slowed and is now increasing more in the suburbs rather than in the city itself.

Fig. 7.1 Population growth of Grenoble 1851 - 1975



7.1 THE GROWTH OF GRENOBLE

Grenoble is a city situated at the confluence of the rivers Drac and Isère at the point where the Drac had deposited vast areas of gravel providing a secure basis for a bridging point. It is a natural route focus and the meeting point for the different 'pays' outlined in Chapter 5. However, the rivers were liable to severe flooding until the channelling of the Drac in the 18th century, and the embankment of the Isère both above and below the city in the 19th century. Furthermore, the advantages of the situation were essentially local and limited, both by the natural environment and by competition from other urban centres, particularly Lyon and Chambéry. Given the limitations of the situation, and the difficulties of the site, the development of the city must be in large part attributed to human factors(Debreuil 1968).

Although there is little archaeological evidence, the presence of human settlement is known to be of great antiquity. At the end of the Iron Age, a celtic tribe, the Allobroges, established a settlement known as Cularo. During the Roman conquest this was annexed and became a staging post on the route from Italy to Vienne and Lyon (Prieur1968). In the 4th century A.D. the Emperor Gratien had the city fortified against the barbarian invasions (Latouche 1956), giving the city the name Gratianopolis, from which the name Grenoble derives. Some evidence of

the oval Roman wall still survives. (Jullian 1908-26, J.J.Hatt 1966).

The town began to develop largely in response to its situation during the Middle Ages, as a centre for fairs and banks. It drew a certain autonomy from the status of the Dauphiné, as the capital of the heir presumptive to the French throne, but the proximity of the Grand-Duchy of Savoie and the Italian wars, forced the town to concentrate on its miliary functions (Sclafert 1926). The population at the end of the 14th century is thought to have been about 4,500, most of whom had been forced to settle outside the Roman wall: however, the cumulative effects of the wars of religion (famine, epidemics and recession) meant that two centuries later the town was scarcely larger than in Roman times (R-H Bautier and J. Jornay 1968-71, V. Chomel 1963).

However, the triumph of the Protestants in 1590 under the leadership of Lesdiguières brought peace and prosperity. The town walls were extended, and access roads were improved and extended, thereby increasing commercial activity. Industrial activities developed from this time, particularly glove-making using leather from small Alpine herds. This skin working required a plentiful supply of labour, easily found in the surrounding villages either as outworkers or as migrants to the town. As the reputation of the industry developed, so the town's

population spread beyond the new walls, and had reached 20,000 by 1700, remaining stable or declining slightly until after the Revolution (Armand and Marie 1965).

From 1801 Grenoble grew steadily: its traditional activities revitalised. Jouvin invented glove-cutting machinery which gave that industry a new lease of life from 1839. Other industries using local resources developed; such as the making of straw hats (Privat 1973). Of much greater importance was the exploitation of mineral wealth; limestone quarries for cement were excavated in the Vercors and at St. Egrève where the industrial preparation of chalk grew rapidly , the railway allowing transport of coal from La Mure. The growth of population in the city, stimulated not only by the resurgence of industry but by the presence of a large garrison, necessitated the further extension of the city ramparts. The old town was further planned, with streets widened, and new quartiers constructed under the initiative of the mayor Berriat in 1840. The railway located in this new sector precipitated the development of Grenoble in a Westerly direction.

This saw the beginning of the steady growth of Grenoble until 1946. Decisive progress in communications by rail and road made growth easier. But it was nevertheless the mountain environment which stimulated the progress of the 19th century.

> 'C'est une date décisive dans l'histoire du Dauphiné que la première utilisation de l'énergie hydraulique, en Septembre 1869... La ville de Grenoble, étroitement associée à cet essor en tire un élan nouveau'.
>
> Privat p.377-9.

The era of 'la Houille Blanche', stimulated the paper and metallurgical industry, particularly the processing of aluminium. These industrial processes in turn bolstered the banking business and were the stimuli to the establishment of the university. From 1851 the population of the rural communes of Isère had reached its peak, and the mountain areas in particular had reached a state of overpopulation in relation to resources (Sauvy 1966). The expanding town drew in this surplus from a relatively restricted area; and this predominantly Alpine immigration doubled the population of Grenoble from 1851 to 1896, (Veyret-Verner 1948) and helped shape its future[1].

> 'Parmi ces migrants formés à la rude école de la montagne, laborieux et tenaces, les hommes plus dynamiques du Sud vont jouer un role de premier plan, fournissant à l'industrie des dirigeants hardis toujours prompts à tirer parti, des ferments de renouveau et capables de former le destin'[1]

---

[1] Migrants such as Bouchayer and Viallet from the Matésine and Joya from Vizille who founded very successful factories, opening up national and international markets for their metallurgical products: turbines and conduits.

The development of industry was the cornerstone of Grenoble's growth. Glove-making reached its peak in the Second Empire: in 1869 12 million pairs of gloves were produced, and tens of thousands were employed in the industry (30,000 in cutting alone). Prosperity suffered from 1872 with the imposition of customs barriers and development of competition from other areas particularly from Millau. Glove-making still remains in the town and has diversified into the making of stockinette and ready-made clothes but it no longer dominates the industrial scene; with less than 5,000 employed in the whole textiles/clothing/leather sector.

Metallurgy was the key sector in industrial renewal. (See Table 7.1). It employed only 250 at the peak of the glove-making period, until the operation of hydro-electricity offered unforeseen opportunities for industry. Many local firms were established to take advantage of this opportunity, and even today there is a large proportion of internal capital in the metallurgical industries (Labasse 1955). Within the agglomeration metal working employs about 20% of the workforce. Traditional metallurgy consists of hydraulic equipment as produced in the Neyrpic factories, particularly turbines and sluices. The newer industry consists of electric and electronic apparatus, which has shown exceptional growth since 1946. The major firm is Merlin-Gerin producing

		Agglomeration of Grenoble 1968	%	Isere 1968	%	Isere 1975	%	Agglomeration of Grenoble 1975	%	City of Grenoble 1975	%
01	Agriculture	1584	1.2	31560	10.3	21006	6.06	800	0.51	80	0.11
02	Ag.& food inds.	3204	2.5	6952	2.3	7410	2.14	3135	1.99	1730	2.49
03	Solid Combust-ible materials	12	-	2140	0.7	1285	0.37	10	0.01	- v	-
04	Gas	8	-	18	-	10		-	-	-	-
05	Electricity, water & various	1492	1.2	2816	0.9	2925	0.84	1445	0.92	620	0.89
06	Natural gas & petrol products	428	0.3	692	0.2	970	0.28	460	0.29	205	0.29
07	Construction & ceramics	1200	0.9	3796	1.2	3515	1.01	1050	0.67	270	0.39
08	Glass	120	0.1	388	0.1	415	0.12	100	0.06	75	0.11
09	Iron and steel	124	0.1	1800	0.6	1660	0.48	205	0.13	85	0.12

circuit-breakers, transformers and control boxes; which

		Agglomeration of Grenoble 1968	%	Isere 1968	%	Isere 1975	%	Agglomeration of Grenoble 1975	%	City of Grenoble 1975	%
01	Agriculture	1584	1.2	31560	10.3	21006	6.06	800	0.51	80	0.11
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03	Solid Combust-ible materials	12	-	2140	0.7	1285	0.37	10	0.01	- v	-
04	Gas	8	-	18	-	10		-	-	-	-
05	Electricity, water & various	1492	1.2	2816	0.9	2925	0.84	1445	0.92	620	0.89
06	Natural gas & petrol products	428	0.3	692	0.2	970	0.28	460	0.29	205	0.29
07	Construction & ceramics	1200	0.9	3796	1.2	3515	1.01	1050	0.67	270	0.39
08	Glass	120	0.1	388	0.1	415	0.12	100	0.06	75	0.11
09	Iron and steel	124	0.1	1800	0.6	1660	0.48	205	0.13	85	0.12
10	Nonferrous metals & minerals	92	0.1	784	0.3	995	0.29	135	0.09	20	0.03
11	Primary metal working	4940	3.8	9700	3.2	12025	3.47	5395	3.43	2090	3.00
12	Mechanical industry	8856	6.9	16248	5.3	24770	7.14	13280	8.44	5270	7.57
13	Elec.industry	9140	7.1	14032	4.6	18905	5.45	11780	7.49	4675	6.72
14	Cars, motor-cyles & cycles	228	0.2	3976	1.3	5340	1.54	255	0.16	115	0.17
15	Naval, army, air force construction	128	0.1	164	0.1	60	0.02	25	0.02	10	0.01
16	Chemical ind.	3936	3.1	11924	3.9	12750	3.68	4725	3.00	1140	1.64
17	Textiles	1828	1.4	18092	5.9	13570	3.91	1520	0.97	570	0.82
18	Clothing	2012	1.6	5028	1.6	5840	1.68	2350	1.49	1155	1.66
19	Leathers	1124	0.9	5320	1.7	4130	1.19	675	0.43	460	0.66
20	Wood industry	904	0.7	4152	1.4	3855	1.11	650	0.41	215	0.31
21	Papers and cardboard	2760	2.1	7884	2.6	8720	2.51	3015	1.92	550	0.79
22	Printing and publishing	1848	1.4	2685	0.9	3145	0.91	1935	1.23	1050	1.51
23	Diverse industries	1344	1.0	4112	1.3	6535	1.88	2355	1.50	960	1.38
24	Building and public works	13540	10.5	29512	9.6	31955	9.21	13880	8.82	5335	7.66
25	Transport	3932	3.1	8032	2.6	9335	2.69	4605	2.93	2105	3.02
26	Telecommuni-cations	1556	1.2	3808	1.2	4915	1.42	2295	1.46	1165	1.67
27	Housing	872	0.7	1084	0.4	1285	0.37	910	0.58	515	0.74
28	Other services	20148	15.6	37428	12.2	46910	13.53	25425	16.16	12720	0.18
29	Commerce	14676	11.4	27760	9.1	33380	9.63	18065	11.48	8605	12.36
30	Banks and insurance	1884	1.5	2984	1.0	4900	1.41	3060	1.94	1735	2.49
31	State service except Army	14164	11.0	21880	7.1	31665	9.13	20780	13.20	9650	13.86
32	Army	1576	1.2	2620	0.9	2385	0.69	1455	0.92	810	1.16
33	Local & semi-public co-operatives	2528	2.0	4800	1.6	7705	2.22	4190	2.66	1810	2.60
34	Social security	1496	1.2	2012	0.7	2945	0.85	2135	1.36	1260	1.81
35	Private, foreign, international admin.	2748	2.1	5280	1.7	7155	2.06	4035	2.56	1915	2.75
36	Domestic service	2360	1.8	4948	1.6	2405	0.69	1230	0.78	640	0.92
37	Others	- 128,792		- 306,404		346,785		- 157,365		- 69,610	

circuit-breakers, transformers and control boxes; which employs in its 8 Grenoble factories over 60% of the workforce in this sector. The metallurgical industry has further diversified; the construction of plant for public works (Caterpillar tractors), and electronics having been grafted onto the more traditional industry.

The inter-war years saw the start of the food industry. A modest firm started by Brun in 1915 for the manufacture of bread for the armed forces, became one of the largest biscuit manufacturers in the world. Other food industries include chocolates, sweets and pastas and rice. The growth of these industries is remarkable as Grenoble has an eccentric location in relation to national markets and primary products. In the final analysis initiative is the key to this success.

If industry provided the initial impetus to Grenoble's population growth, its present success is supported by two other important factors: tourism and the university. Tourism began to penetrate the Alps at the end of the 19th century with climbers such as Whymper tackling the peaks of the Oisans. Grenoble provided an admirable base for exploration of the diverse 'pays' which became accessible in different directions particularly as car transport became more widespread. The first Syndicat d'Initiative in France was founded here in 1889, and Alpine Societies multiplied; the Club Alpin français, the Ski-Club

des Alpes. The basic attractions of the area - alpinism, and thermalism in spas such as Uriage and Allevard - attracted only an élite until after the second World War. After the war foreign holidays became widely available, and Grenoble saw a major influx of visitors during the summer. Its position as a winter sports centre has been reinforced since the Winter Olympics of 1968. It has also, typically, developed the winter sports industry. The town is the major French centre for the manufacture and erection of téléskis and télécabins by Pomagalski many of which are exported.

The university has benefited from close collaboration with industry. Specialised institutes were brought into being for the new techniques of hydrology and electricity and for the training of engineers and scientists. Other faculties such as Law and languages also grew in response to changing conditions. The change in status in Grenoble's university has been remarkable: from the bottom rank at the turn of the century, Grenoble now ranks in third place as a university town, in terms of the proportion of students to total population.

The intellectual functions of the city are particularly concerned with industrial research. Outside the factory - and University-based research faculties are the autonomous research institutes. The most notable is the hydraulics laboratory set up by Neyrpic, known as

SOGREAH (Société Grenobloise d'Etudes et d'applications hydrauliques), whose research field encompasses the whole of fluid mechanics and thermodynamics. The centre for nuclear studies was located in Grenoble as part of the planned decentralisation programme, and employs over 1,500. Other organisations also have been drawn into the scientific centre, making the city one of the major technical research centres in France, a healthy sign for a secure industrial future.

The industrial basis of the town's prosperity does not preclude the extension of tertiary and quarternary functions. In 1975 the tertiary sector exceeded the secondary. Grenoble still retains administrative functions as the department capital, although on a lesser scale than its former status as the capital of the Dauphiné. As department capital Grenoble provides the Préfecture, and the judiciary as well as administration of Posts and Telegraphs, Roads and Bridges, and finance. Its military status has declined, particularly since the Second World War.

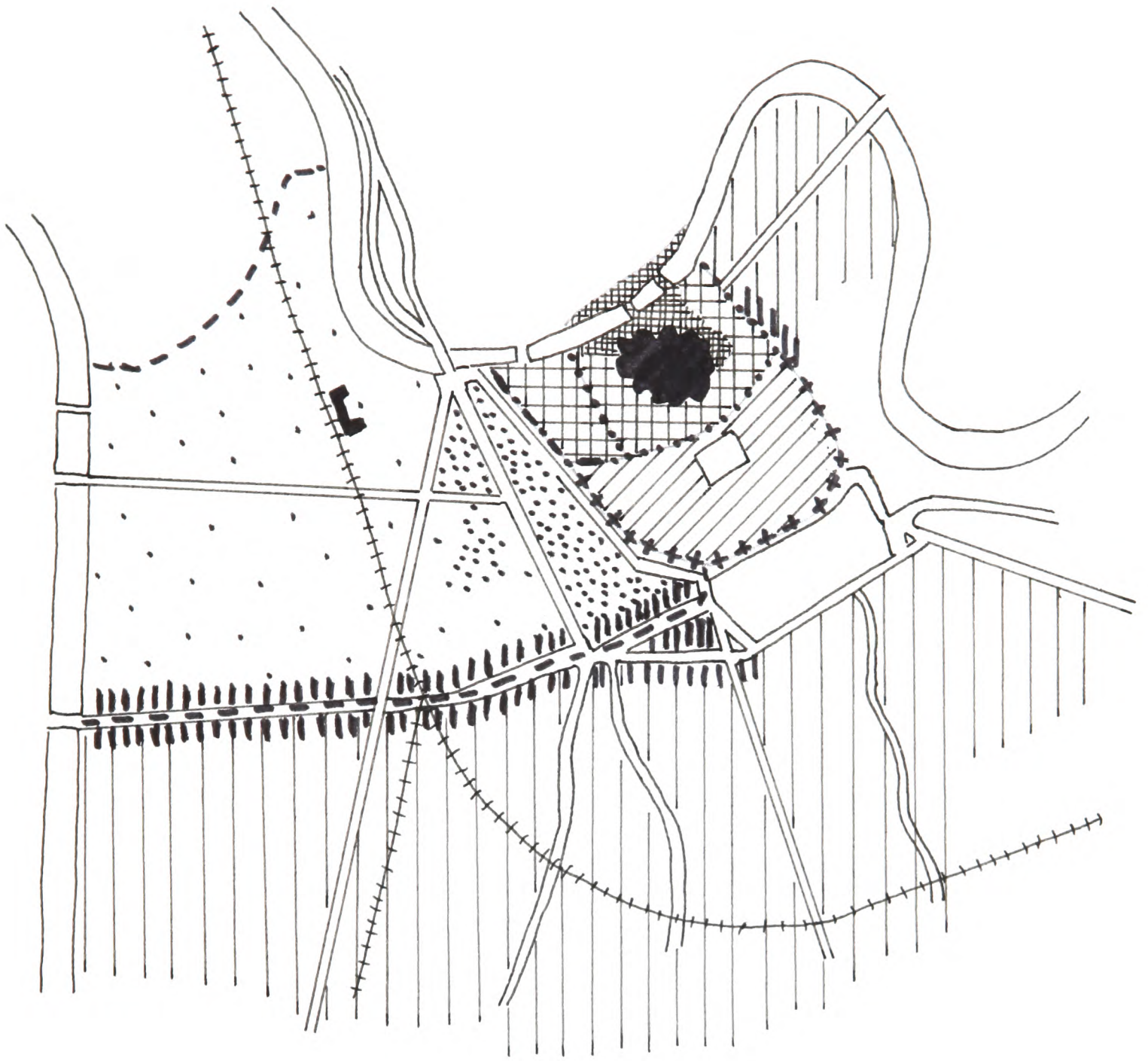
Other functions are commercial and economic, brought about by industrial growth. Taxation and banking services serve industry, but many are now directed from Paris and Lyon. Grenoble's commerce is both of a wholesale and retail nature, providing higher-order services for the town and the surrounding rural hinterlands, second only

to Lyon in the Rhône-Alpes (Armand p.897-8).

The three pillars of industry, tourism and the university may be seen as the major factors in Grenoble's population growth. Undoubtedly local initiative in the utilisation of resources, and the close cooperation between industry and university have contributed to the town's success and to its attraction. The town itself has changed in response to these impulses. It has been mentioned already that in succeeding periods it outgrew the series of walls which were constructed around it, and by the beginning of the nineteenth century was extending westwardly into the former bed of the Drac, around the Cours Berriat (see fig. 7.2).

The western suburb between the West Gate of Grenoble and the first bridge of the Drac was physically separated from the old town by the powerful fortifications until their demolition in the 1870s and 1880s, and was administratively separate until 1862. From its integration into the town proper, the Western quartier gathered momentum, and residential areas were laid out on a grid-iron plan, and large industries were established on cheap land. This new area showed almost all the town's population growth in the nineteenth century, migrants moving into the cheap houses being built there (Jouanny 1931).

Fig. 7.2 Grenoble: Stages of development



Roman town and 3rd century wall

Medieval extensions

Extensions from 16th and 17th century

Lesdiguières wall 1591-1606

Crequi wall 1670-1673

extensions from 1830-1860

Haxo wall 1832-1836

extensions from 1850-1914

quartiers constructed from 1880 to 1914

1880 wall

quartiers mostly built after 1945

quartiers built wholly since 1945

Railway

Between the wars growth occurred outside the walls along the access routes to the centre; the suburb of Ile Verte along the Chambéry road, and the Southern suburbs - Croix-Rouge, l'Abbaye, la Bajatière, la Capuche, les Eaux-Claires - spread over the plain in a series of modest villas and cheap apartments. The development of the Southern suburbs accelerated with the demolition of the containing city wall. Finally from the 1930s the expansion of Grenoble overflowed into the neighbouring communes of Fontaine, St. Martin d'Hères, La Tronche and St. Martin le Vinoux.

Thus the evolution of the city's distinctive economy has produced a succession of quartiers, each providing a different environment for living and working, and each attracting migrants in turn. The characteristics of the areas of Grenoble are discussed more fully in the next section.

7.2 THE QUARTIERS OF GRENOBLE

The origins of the centre of the city and the quartiers towards the Drac have already been considered. Until 1954 the growth of population had been moderate, with new housing construction on a comparatively modest scale: at the 1956 census 32% of the housing stock was considered to be overpopulated. The late 50s saw the period of maximum intensity of construction with over 2,600 new units completed each year. 1962 and 1963 saw a slowing of this trend because of the production of the urban plan but building was boosted again by the construction of the Olympic village and the commencement of the Villeneuve Z.U.P.

Development occurred to the South of the existing city along the main access routes and between these routes. A network of new streets arose in a more or less haphazard fashion, for example along the Cours de la Libération and the Avenue Jean Perrot, with the buildings reaching ever greater heights.

After the disappearance of individual gardens and market garden plots it became the turn of the villas to come under the demolition hammer and give way to large apartment blocks. As land became scarce so building became more adventurous, for example the three luxury tower blocks in the Ile Verte. By 1962 85% of the population were living in blocks of more than six homes, compared to 74% in 1946.

Grenoble almost escaped the Grandes Ensembles: the nearest approach is the HLM housing in the Cité Teyssière on the South-Eastern boundary of the city.

The radial-concentric pattern of the city allows easy identification of the different phases of urbanisation (Fig. 7.2). The old town is best delimited by a view from the vantage point of the Bastille. It hugs both sides of the meander of the Isère, on the right bank the St.Laurent quartier which possesses one of the oldest religious buildings in France (the Saint-Laurent crypt, now the planning offices of the city); on the left bank the quartier of Très-Cloîtres and Notre-Dame.

The old quartier is distinctive from above, with its red roofs and round tiles contrasting with the more modern sombre greys of the newer districts to the South. At ground level the appearance is less romantic. The streets, narrow and treacherously winding for modern traffic, are also dirty and smelly. The houses are tall and narrow, tightly packed, in a state of disrepair with paint peeling and windows boarded. Seedy cafés are filled with men of Italian or Algerian origin. The old city has been the foreigners' preserve for 50 years, where one can find cheap rents and the benefits of a central location. St. Laurent is less oppressive as it is strung out along one or two streets. Indeed up the slopes of Mont Rabot are situated new university premises including

the Institut de Géologie and Institut de Géographie Alpine. And from there one can see geography laid out in front of one's very eyes!

Immediately to the South of the river and slightly West of the old town is situated the centre of the city. Turning one's back on the river, the church of St.André, and the Palais de Justice one emerges through tiny streets and squares to the Place Grenette, a favourite haunt of students and tourists alike. To the East (and thus the South-East of the old town) lies the administrative centre around the Place de Verdun - the préfecture, the Hotel Division, the library and the museum, the departmental archives, and the city administrative. The centre is being extended towards the South, with the redesigned Parc Paul Mistral containing the tower block Hôtel de Ville.

Moving west from the Place Grenette towards the Station is what may be termed the CBD, the centre of Grenoblois bourgeoisie and commerce: mostly constructed just after the turn of the century. The streets are tree-lined, the buildings substantial, the shops expensive. It has an air of dignity, sometimes slightly faded, the smaller streets boasting night clubs and strip clubs and the tiny restaurants serving local gastronomic delicacies, so sought after by tourists. The larger crossroads bustle with traffic. The station marks an abrupt change of scene, the station itself now a modern

building faced in reflecting glass. To the North-West lies an industrial sector between the two rivers. To the West and South lie the newer suburbs built outside the strangling city wall at the beginning of the century. The North-West along the railway is of an industrial character, having traditional industries, leather working and mégisseries (conveniently close to the municipal abattoir), as well as meat wholesalers' warehouses and smaller industrial concerns. Here are sited the transformer department of Merlin-Gérin and firms manufacturing copper pipes, and new industries such as Raymond press-studs (derived from glove-making traditions!) and food processors.

The plain between the two rivers used to be occupied only by the arsenal and the Polygone d'Artillerie, with the exception of the gas works, the abattoirs and later Merlin-Gérin. Since 1959 however this huge area has become the pivot of scientific research with the siting of the Nuclear Studies Centre, electronic laboratories and the laboratories of the CNRS, while the Science faculties and its principal institutes are just behind the quays of the Isère. However this huge area has no bustle, no life, no residents except those in the village-like terraces close to the abattoir. The Nuclear Studies centre is sealed off, the roads deserted except at rush-hour. To the South between the Cours Berriat, the station and the Drac one finds again the

residential elegance of the commercial quarter; but it is a very short distance from this to the twentieth century jungle to the South.

It was the stimulus of the first World War which freed the city from the stranglehold of its walls. The inter-war period saw the construction of the quartiers of L'Ile Verte and La Bajatière, both essentially quartiers of villas, although now interspersed with larger 'immeubles' but otherwise similar to middle-class inter-war suburban expension around so many British cities. Ile Verte's pleasant aspects are reinforced by the park-land incorporated into the urban scene. In other quartiers however the aspect is less comfortable, particularly those 'cités ouvrières' constructed near to major industrial works, such as those in the Beauvert and Anatole-France quartiers near to the Société de la Viscose and the firm of Piccard-Pichet. Similar punctiform development occurred in Capuche and L'Abbaye between the Neyret-Beylier factory and the Biscuiterie Brun, and Merlin-Gérin.

From 1945 the spaces in existing development were infilled, mostly by apartment blocks rather than villas. The Southern suburbs are not particularly distinctive in style and there is no marked segregation between them. The differences lie at a smaller scale, at the block or plot level. However one marked example of segregation is the Cite Teyssière, which is segregated from the rest

of the city by the railway line. This grim estate of over 1300 HLM flats is composed of four or five storey blocks, the windows patched up with tape, the greyness only enlivened by spray-paint slogans. The whole is rapidly deteriorating. The rapid growth of these suburbs had been brought about by the influx of population; and the inevitable consequence was poor design, lack of infrastructure and services, whether commercial, educational or sanitary.

It is evident that these lessons have been learned, and at less cost in human terms than in many other cities. The plan Bernard of the 60s developed and beautified the Southern city centre; a movement given impetus by the creation of sports facilities within the Mistral parc. The line of the old walls, Boulevards Maréchal Foch and Maréchal Joffre are now marked by tree-lined extensive avenues (6 lanes each way) with new large department stores, banks, and other services, on the lower storeys of the substantial blocks either side.

New development within the city limits is confined to the Western and Southern boundaries. Along the Western boundary on the banks of the Drac there existed already considerable industrial development. From 1964 the Cité Paul Mistral was constructed; one of the most substantial HLM developments in the city of much pleasanter aspect and better state of repair than Teyssière,

and now comprising 1882 HLMs and 68 ILNS. Perhaps this is due to the better provision of facilities and also the attitude of the residents - one wall bore the legend 'Mistral ne doit pas être un ghetto'.

Private developments at the Porte du Drac are high amenity apartments boasting only 5 minutes' drive to the city centre.

On the Southern city boundaries the former airport has been taken over for development of the Olympic Village and the Villeneuve Z.U.P., which have been combined to provide over 3000 HLMs, private housing and commercial centre. The Z.U.P. was created on 31.12.1961 to urbanise 160 ha of Grenoble and 80 ha of Echirolles on the open space of the Jean Mermoz aeroport. In 1963 the urban planning of Grenoble was passed to the architect H. Bernard for a master plan. His plan, avoiding the historic centre, 'rebuilt' a new centre in the 'Malherbe' district, with offices, services and tertiary industry to predominate.

The plan also envisaged an agglomeration of over 1 million, with transfer of industrial activities to the periphery: the plan was opposed by the neighbouring communes which, having themselves sustained growth, did not wish to be absorbed into a b usiness metropolis. In 1964 a start was made in the Eaux Claires district to intensify housing densities and remove industries

located along the Drac. It was then that Grenoble was designated as the centre for the Winter Olympics of 1968.

Progress and decision making was on ice, with the land acquired deliberately left idle while the SADI (Société d'Aménagement du Départment de l'Isère) and the municipality considered choices of developer. It was perhaps fortunate that the municipal elections of May 1965 intervened, bringing to power the formidable M. Dubedout. The opportunity of the Olympics was grasped; to make good the deficiencies of the housing stock, while taking advantage of very favourable interest rates.

The municipality undertook the construction of housing for athletes, journalists and support staff. These would become, after the Games, HLMs in the Village Olympique or modestly priced housing in the quartier Malherbe. From May 1965 the city entrusted the planning of the Z.U.P. to the SADI. The municipality also took the opportunity of assessing the plan Bernard, and in so doing set up the Agence d'Urbanisme de l'Agglomération Grenobloise (AUAG).

The Village Olympique was constructed in a year and a half; 2,000 dwellings followed by infrastructure. Their future use was borne in mind, it would be a 'quartier social' 73% HLMs. The village is composed of a central zone of dwellings with peripheral facilities;

the flats along pedestrian walkways with covered parking lots underneath. The lessons of this venture were applied to the building of Villeneuve. It was realised that the peripheral location of schools, CES, shops and cafés were not conducive to 'animation' in the streets. The Village Olympique finally constructed is an interesting example of the miniature Garden City, with its inconveniences, lack of animation and community - but also the advantages of peace and security. It has its place in a city of vastly different quartiers in terms of both architecture and population.

The Agence d'Urbanisme meanwhile redefined the object of the Z.U.P., creating a new secondary centre, a balanced quartier with both employment and residence, coupled with shopping and educational facilities and good access to the centre not an under-equipped surburb or a grande ensemble. Villeneuve was conceived as a high density development to foster community feeling and the attraction of employment: 50% of 4300 logements were to be HLM.

Villeneuve was to contain 3 quartiers and two parks, the first quartier being l'Arlequin in Grenoble and Surieux in Echirolles, isolated from traffic and other nuisances. Arlequin, a development of 2000 dwellings, is a long sinuous continuous building of impressive appearance and unusual colouring set in an urban park,

with integrated infrastructure including sport, schools and shops, rubbish collection, garaging (and people getting lost) - but vandalism is low, and as one watchman said 'il y a des problèmes partout, même aux trois Tours de l'Ile Verte'. Two further quartiers are yet to be built. The commercial centre is well under way, with a huge variety of shops with underfloor parking. The major employer is the new Hewlett Packard factory and the offices of the 'Trident' firm.

Thus there are a wide variety of quartiers within the city. The basic differences between the different areas of the city have been analysed by A.U.A.G. in their principal components analysis of Grenoble quartiers (1974). The components which emerge from this analysis divide the city on the basis of the age and socio-professional status of heads of households.

The mean age of population in each quartier is shown in Fig. 7.3, on which two areas (with predominantly young and old household heads) are indicated. The shaded area denotes those quartiers with a significant proportion of heads of households over 60 years old; the stippled area represents areas with heads of households aged predominantly between 25 and 50. This map should be compared with 7.4 which denotes the years when the majority of housing was built. It is clear that the older areas of the city have an older population; while

Fig. 7.3 Grenoble quartiers : mean age of household population



Fig. 7.4. Age of housing: Grenoble 1968

The majority of housing was constructed in the following periods:-

a pre-1871

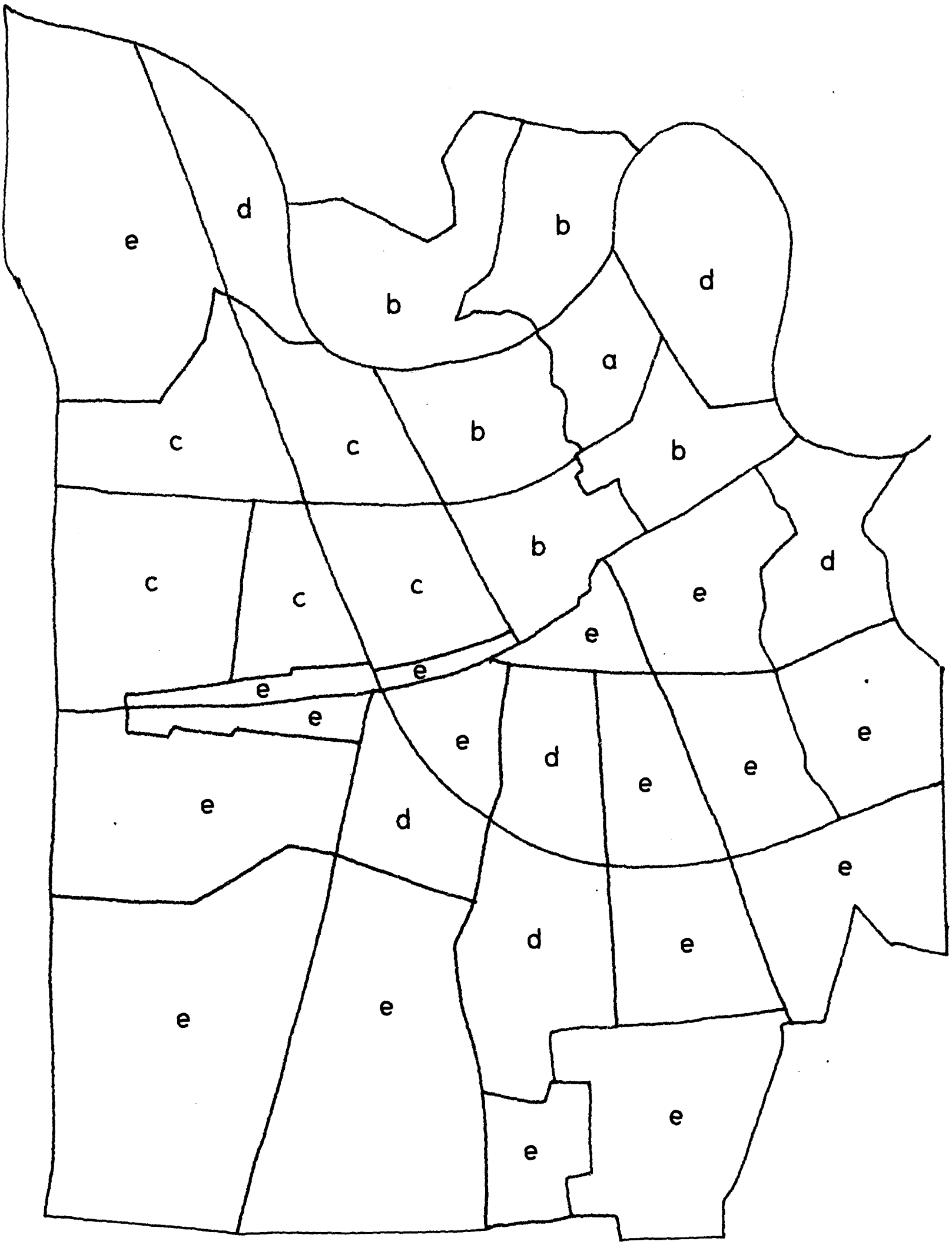
b pre-1871 to 1914

c 1371 to 1948

d 1915 to 1968

e 1949 to 1968

Fig. 7.4 Age of housing



the newest suburbs to the South and in the Polygone have a younger population. These newest suburbs have a high level of amenity (Fig. 7.5) and the highest proportion of HLM housing (Fig. 7.6), and so have proved attractive to recent migrants to the city. The most recent quartiers of Villeneuve and Village Olympique have the greatest imbalance in age structure, with a very high proportion of young people particularly in the Olympic Village (A.U.A.G. p.14).

Segregation according to socio-professional status is less clear-cut but there appears to be a division along an axis running NW - SE.

> 'Si on projette les quartiers sur cette diagonale, on voit immédiatement les extrêmes: Saint Laurent, Teisseire, Polygone, à Foch-Nord, Conservatoire, Albert 1er.'
>
> (p.23)

This conclusion is confirmed by reference to Fig. 7.7, which shows the varied distribution of the 'ouvriers' category.

These two categories of differentiation correspond to two of the basic axes of urban structure suggested by **Shevky** and Bell et al; the third category - the foreign dimension is shown graphically in Fig. 7.8, showing a very high segregation of the foreign population in the old town. The relationship of these three axes of differentiation to the formative process of migration (Johnston 1974) is examined in the ensuing sections.

Fig. 7.5 Houses with inside w.c.

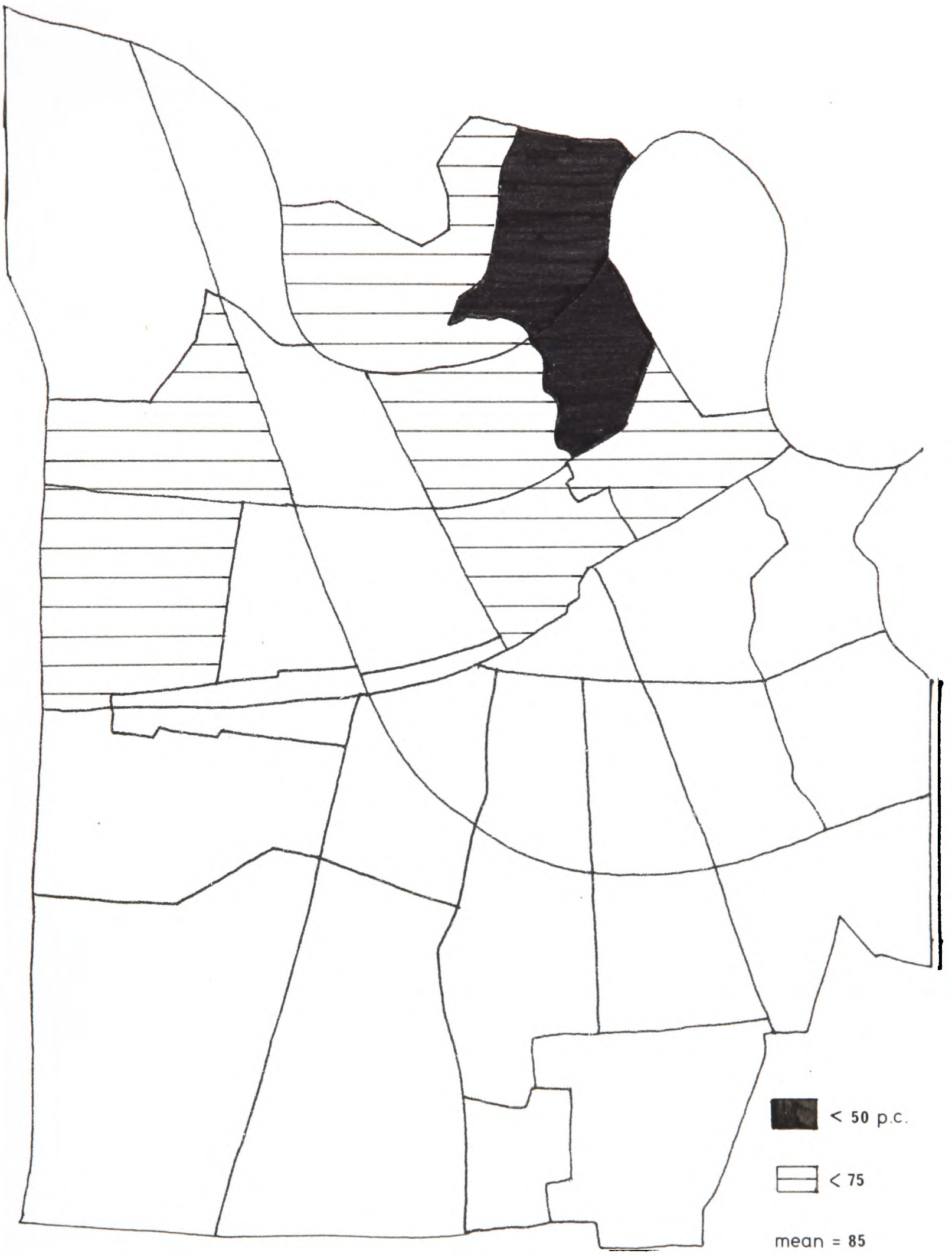


Fig. 7.6. H.L.M. areas

	Name	Approx. no. of dwellings
1	Paul Mistral	2020
2	Libération	103
3	A. Abry	238
4	Leo Lagrange	218
5	Pierre Loti	66
6	Albert 1er	36
7	Les Chamilles	48
8	Capuche	124
9	George Sand	101
10	Malherbe	178
11	Villeneuve/Village Olympique	3000
12	Leon Jouhaux	564
13	Teyssière	1307
14	Chatelet	198
15	Abbaye/Chatelet II	432
16	Lo Po	70
17	Chatelet III	726
18	Maison Blanchet	76

Fig. 7.6 H.L.M. areas

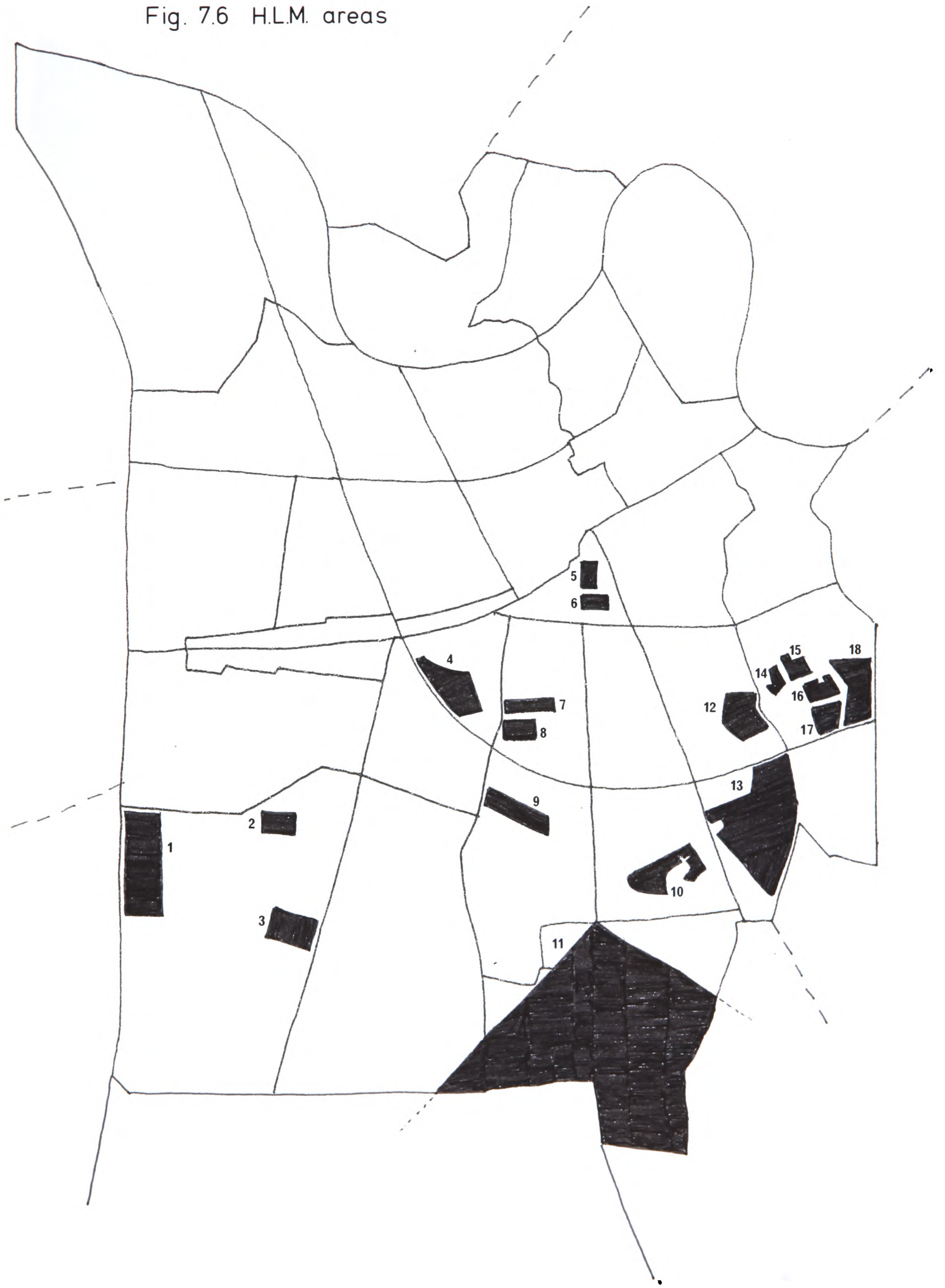


Fig. 7.7 Distribution of "Ouvriers" (socio-professional group 6)

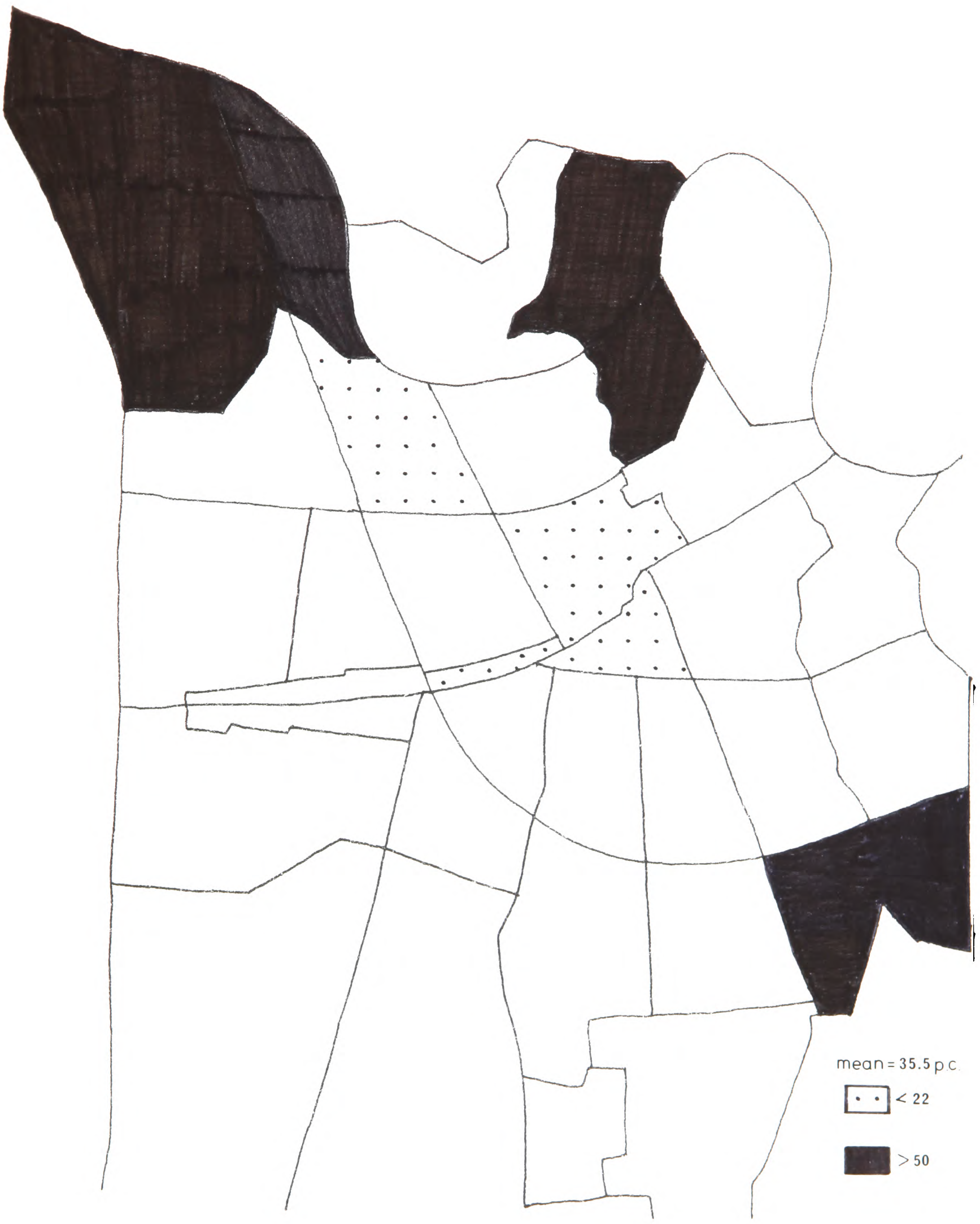
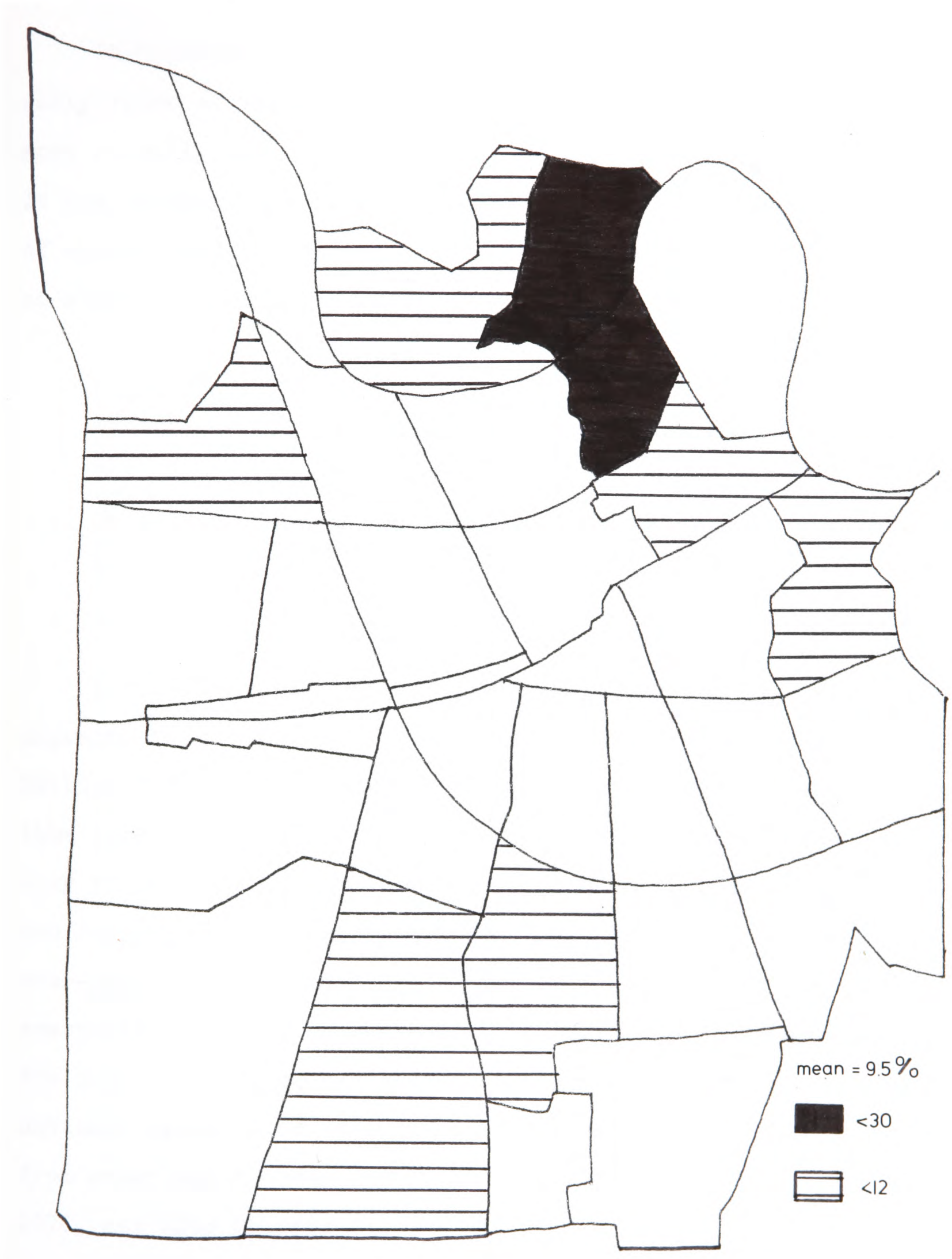


Fig. 7.8 Distribution of foreigners



7.3 IN-MIGRATION TO GRENOBLE

In-migration to Grenoble has been studied for the early years of this century by J. Jouanny (1931) and most recently and comprehensively by M-L-T Michoud (1965). It has already been indicated that the traditional areas of supply were the mountain zones. However, the areas of supply have changed considerably:

> 'La montagne et le Grésivaudan, foyers traditionnels d'émigration vers Grenoble, ont réduit leur apport de 1926 à 1962, tandis que l'avant-pays renforçait le rien. On assiste donc au tarissement d'une immigration d'origine montagnarde qui fut primordiale jusqu'en 1926. De plus le mouvement migratoire est maintenant alimenté en majeure partie par des petits centres urbains et non plus par les campagnes'.
>
> (Armand 1974, p.560)

In 1896 Grenoble drew over two-thirds of its in-migrants from the Isère, the neighbouring departments of Savoie, Haute-Savoie, Hautes-Alpes, Basses-Alpes and Drôme, thus emphasizing the specifically alpine character of the city (Jouanny 1931). However, by 1954-62 this proportion had dropped to less than 40%. The mountain zones, formerly over-populated, by this time no longer constituted a reservoir of labour on which the agglomeration could draw. The city in the post-war period increasingly attracts a national spectrum of in-migrants arriving predominantly from other major urban and industrial centres (Armand 1974, see also Chapter 2).

In the period 1854-1968 the Grenoble agglomeration increased by over 100,000 migrants, i.e. by over 50%. This figure is greater than that for almost any other town of comparable size[1], and greater than almost any other town in the Alps, with the exception of some very rapidly growing resorts, notably Val d'Isère. During this period the changing origin of migrants becomes very clear: with less than 20% originating from within the department, and over one-third from abroad, the rest (47%) coming from other departments of France. However, even at this scale the changing origins may be seen: the former dominance of the Savoyard contingent has been replaced by substantial numbers from the 'avant-pays' from Ain, Loire, Rhône and Ardèche (Michoud 1965). It is clear from the analysis of areas of out-migration within Isère that the Bas-Dauphiné although losing proportionally fewer than the Alpine areas, is in fact providing the majority of out-migrants moving to larger centres.

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[1]Other towns showing comparable rates of in-migration were Toulouse and Besançon.

7.4 RECEPTION AREAS WITHIN THE CITY

The quartiers of Grenoble were subjected to an A.I.D. analysis to determine types of reception areas. Their characteristics in 1962 were analysed as independent variables explaining the dependent variable, in-migration 1962-68[1]. Obviously the independent variables could not be the same as those used in the analysis of communes showing out-migration, because the agricultural data is inapplicable and the range of data on socio-economic, demographic and housing characteristics available at the quartier level varies from that available at the commune level. The complete list of variables used is shown in Table 7.2.

The quartiers divide immediately on the basis of the proportion of population in active employment (see Table 7.3 for this and subsequent splits). Group 2 has a low proportion actively employed, and a high rate of in-movement, whereas Group 3 has a lower level of in-migration and a high proportion in employment. This division is essentially the division between the suburbs with a youthful population and thus a high dependency ratio; and the old town with its older population no longer so attractive to migrants.

Group 2 (the suburbs) divides further on the basis of housing amenity (houses with inside w.c.). Group 4 has a low amenity rate and lesser in-migration, consisting

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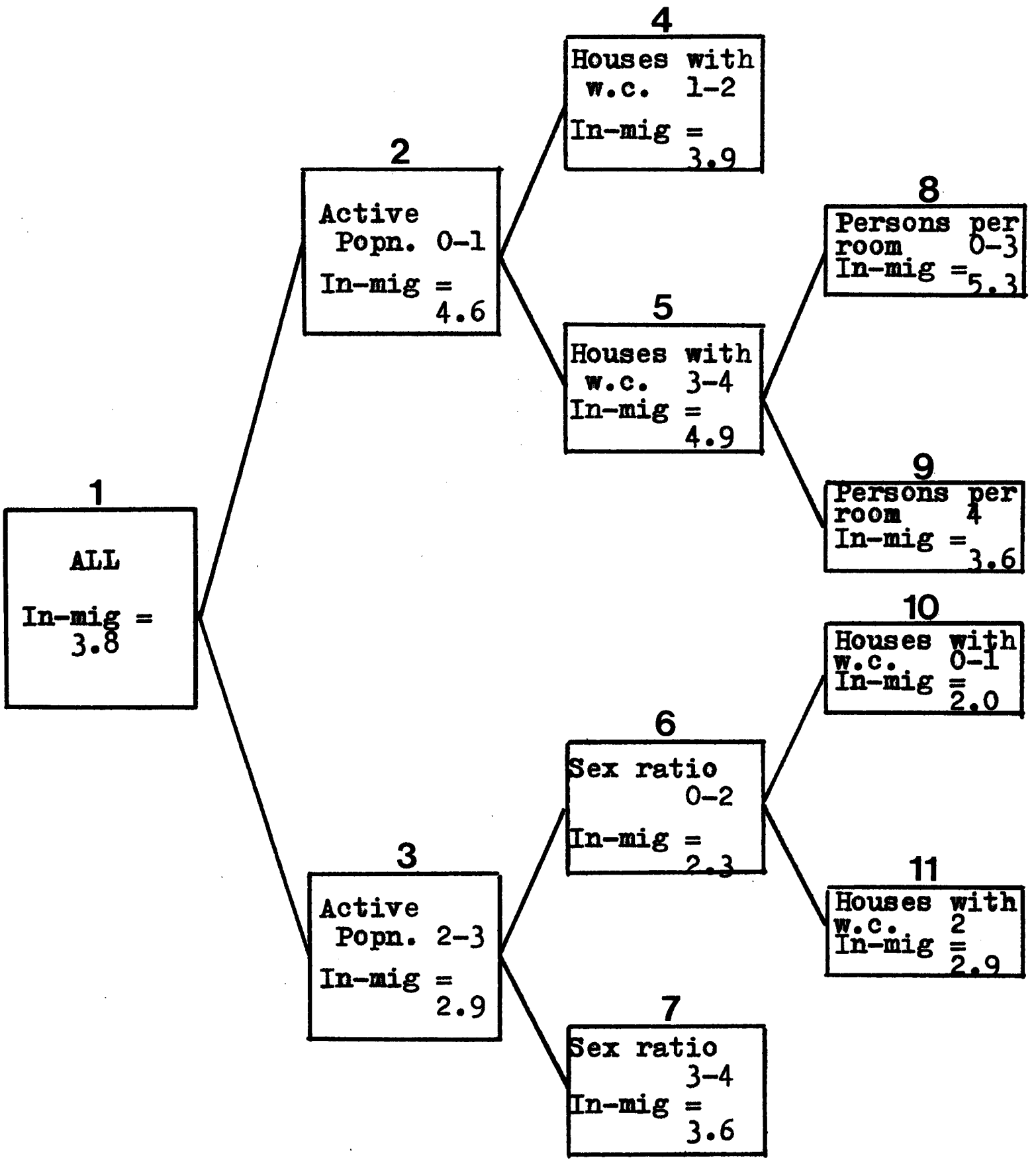
[1] This variable is from the sample survey as no published data is available.

Table 7.2 Variables used in A.I.D. analysis of in-migration to Grenoble quartiers

1. Independent variable: migration rate*
2. Sex ratio % male
3. % population aged 0 - 19
4. % population actively employed
5. % in Socio-Professional groups 5, 6, 7 (working class)
6. Persons per room
7. % houses owned
8. % houses with w.c.
9. Houses built pre-1914

*taken from sample survey of migrants from the 1968 census. No published data available.

Table 7.3 Areas of in-migration A.I.D. Grenoble



of the most central areas or zones of mixed poorer and HLM housing. Group 5 divides into two final groups, on the basis of overcrowding. Group 9 has a high level of overcrowding and the lowest rate of in-migration to the suburbs. It consists of only two quartiers: Chatelet and Teyssière, both with substantial areas of HLM accommodation. Group 8 has the highest rate of in-migration at over 5% per annum, and consists of the rest of the suburbs, particularly in the South of the city.

Group 3 (the central zone) divides on the basis of sex ratio (% male) to form groups 6 and 7. Group 7 is a final group of 6 quartiers with a h igh proportion of males and the highest rates of in-migration in this 'low' group. It consists of the core of the city - Notre Dame, Bir Hakeim Esplanade and Rabot - the areas of traditional foreign im-migration.

Group 6 divides into 2 final groups on the basis of amenity levels. Again there is a strong correlation between low in-migration and low amenity levels. Group 10 has the lowest proportion of w.c.'s (sometimes as low as 20% of housing in St. Laurent), and the lowest in-migration. Group 11 consists of newer areas dating from the nineteenth century, with higher amenity levels and slightly higher rates of in-movement.

These main types of reception areas are summarised in Fig. 7.9. The newest areas provide accommodation for the

Fig. 7.9

Classification of in-migration areas by A.I.D.

Final groups:

Derived from Group 2 (High in-movement, low active population (suburbs))

Group 4. Low amenity rates, central areas or H.L.M. housing.
In-migration 3.86 per annum

Group 9. High overcrowding, H.L.M. areas.
In-migration 3.58

Group 8. Rest of suburbs, very high in-migration 5.29

Derived from Group 3 (Low in-movement, high active population (old town))

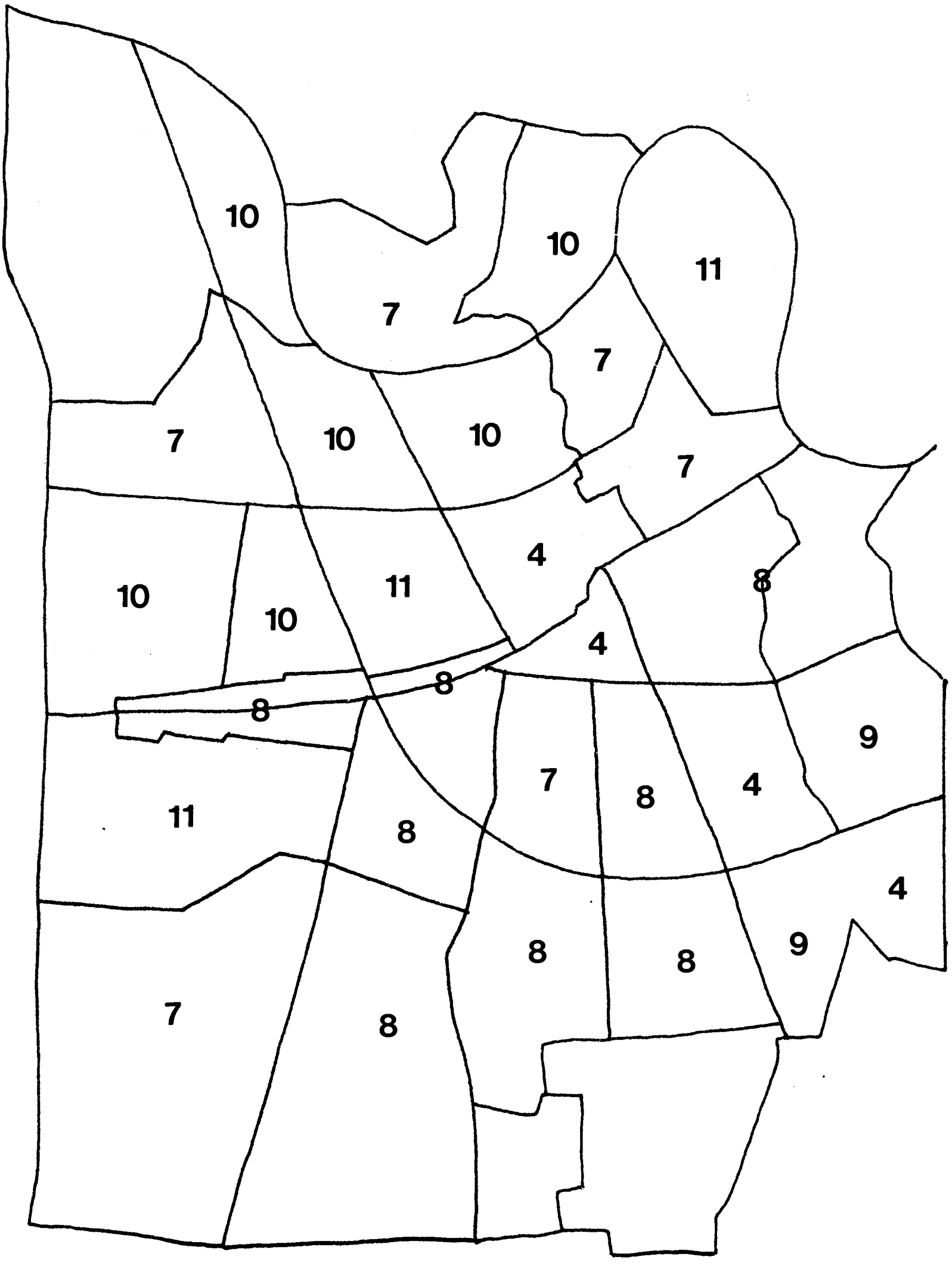
Group 7. High proportion of males, traditional areas of foreign in-migration.
In-migration 3.58

Group 10. Low proportion of W.C.'s.
Lowest in-migration 1.98

Group 11. Higher amenity levels and higher in-migration 2.94

N.B. Some quartiers are divided and others joined as the A.I.D. was performed on the quartiers of 1962.
Polygone, Ville Olympique and Z.U.P. are excluded.

Fig. 7.9 Classification of in-migration areas by A.I.D.



most recent migrants to the city, who are predominantly young people with families. However within this basic relationship of age of housing and the recency of migration the major differential is amenity; the better-favoured areas proving more attractive to the modern city migrant. The final chapter examines the type of migrant moving into the different parts of the city, by area of origin and by personal characteristics, particularly socio-professional status and age; the characteristics found to be important in the P.C.A. of Grenoble.

Chapter 8. The migrants

8.0 The sample survey

8.1 Migrants from abroad

8.2 Migrants from the rest of France

8.3 Migrants from Isère

8.4 Conclusions

'Les taux généralement éléves et globalement largement positifs des bilans migratoires laissent soupçonner l'ampleur des déplacements humains réels. Leur étude peut être menée à bien grâce aux recensements de 1962 et 1968 qui indiquent le lieu de résidence antérieur des nouveaux venu s dans la commune, c'est-à-dire le nombre d'immigrants. Connaissant le solde migratoire on peut en déduire le montant de l'émigration. Malheureusement l'application pratique de cette méthode se heurte à l'énormité des dépouillements - manuels, d'autant qu'en 1968, et souvent même dès 1962, il n'est pratiquement plus dressé de listes nominatives, d'où l'obligation de recourir aux fiches individuelles dont la compulsion est très lente.'

Armand, 1974 p.547.

8.0 THE SAMPLE SURVEY

The French data sources on migration were summarised in Chapter 1. In 1962 the census asked a direct question on the place of previous residence, and this question has been repeated in subsequent censuses of 1968 and 1975. This question therefore gives very valuable information about actual migrations, rather than changes in residence since birth. However, analysis of this data has been by the I.N.S.E.E. at department level only. If one wishes to discover the origin of migrants at communal or cantonal level it is necessary to revert to the individual census returns. As already stated, it was possible to study the 1968 returns for a sample of residents of the city of Grenoble: the 1962 returns were incomplete as many of them had already been destroyed, whereas the 1975 returns were undergoing analysis.

Data from these returns showing migrants between birth and 1968 and more specifically between 1962-68 were extracted in the archives under strict conditions, no names were to be taken and no information about housing or family circumstances was to be taken in case details of cohabitation might be revealed. All information derived from this source was to remain unpublished, and even in unpublished form should relate to groups of migrants, so that no individual could be identified. Even under these strict conditions, laid down by the I.N.S.E.E. and the

director of the departmental archives, a large quantity of useful information was obtained.

The initial aim was the collection of data from the individual returns of 5% of the heads of households in Grenoble. The sample survey data from this source is used to enable the study of both the migrants themselves, and the context or environment within which they are moving. Furthermore it is possible to relate the characteristics of the migrants as a group to the characteristics of their origin and destination areas, and in so doing one can provide a more complete picture of the migration pattern of the 1960s.

The sample actually taken (allowing for a 1% wastage of illegible and unusable information) consisted of 1970 heads of households comprising a 4% sample of all households. It was decided to confine the sample to heads of households as many returns for children would reveal involuntary migrations only, if any at all. Thus the sample consists predominantly of males, aged over 20. Useful information was also obtained about their age, occupational status, and place of work, and most importantly, information about both their place of birth and their place of residence in 1962.

The sample strategy was therefore a stratified one, to obtain a proportion of all heads of households from

each quartier[1]: within that quartier every nth household was sampled. This method inevitably gave rise to a large number of non-migrants, but this was felt to be useful as the characteristics of migrants and non-migrants could then be compared.

The origin of the sample from birth and from the previous census is shown in the Table 8.1, and each category of migrants is considered in further detail in subsequent sections.

Table 8.1. Sample survey: Place of birth, place of residence 1962

Place of Birth		%	Place of residence 1962		%
Grenoble	294	15	Grenoble	1417	72
Rest of Isère	441	22	Rest of Isère	165	8
Rest of France	771	39	Rest of France	252	13
Abroad	464	24	Abroad	136	7
Total	1970	100		1970	100

When considering the characteristics of migrants it would be helpful to have for comparative purposes some characteristics of the total Grenoble population at that time. However, as the migrants consist of heads of households comparisons with total population could be misleading. The socio-professional groups of all heads of households in Grenoble are available, and these are listed in Table 8.2, together with the socio-professional

[1] There are very low numbers in quartiers 9 and 10 because these - the Village Olympique and the Z.U.P. - were under construction.

groups of these heads of households sampled. There are two important discrepancies in these lists: the first is the low number of people retired or out of work. This is because many of those who are retired or unemployed or sick still stated their usual occupation on their census returns, and these are included in the sample analysis, to give a more complete picture of the migrants. The second major discrepancy is the very large number of 'employés', those who work principally in shops and offices, for which there is no satisfactory explanation, except that the term 'employé' is a very general one[1], and so may conceal nuances of status which could suggest that the person employed is in fact in an administrative capacity (and so would be classified as a cadre moyen), or alternatively employed in a more practical position which is not predominantly clerical in nature. It should be noted that those in the agricultural category were all retired, and the 'patrons de l'industrie et de commerce' consisted mostly of small businessmen, such as owners of cafés and hairdressers.

Table 8.2. Socio-Professional status of Heads of Households 1968

	Sample	Grenoble total
Farmers, agricultural workers	0.5	0.3
Managers and Directors	9.1	7.7
Senior Executives and Professionals	7.6	10.7
Executives	13.6	12.8
White collar workers	23.6	10.6
Workmen	29.3	27.0
Domestic workers	1.5	4.6
Not active /retired/Unemployed (incl. students)	14.8	26.3
	100.0	100.0

[1] although implying clerical assistance of some sort

In the ensuing analysis of characteristics of migrants from different areas of origin it was thought helpful to separate students from the 'not active' category, and also soldiers and police, as these formed a considerable number, particularly of those returning from overseas.

Other characteristics of the total sample are presented in Table 8.3 as this gives some basis of comparison for each group of migrants. This shows that three-quarters of the heads of households were male, and that the majority of these were married. The female heads of households consisted largely of widows, mostly in the older age-groups, and single women who were more numerous than single men. This can be attributed to their more adventurous nature - women are inclined to move to the bright lights whereas men tend to stay in the family home until marriage. The small proportion of married women heads of households consists of women awaiting divorce proceedings or women whose husbands were temporarily absent.

The age groupings show a high proportion of population of active age, with a relatively even division between the under 40s and over 40s. The most common means of transport used to work are cars, cycles (including mopeds) and by foot, while public transport is relatively under-utilised. 75% of the sample worked in the city, emphasising the feasibility of walking and cycling, while a further 21% worked in neighbouring communes, mostly travelling by car.

The remaining 4% of those actively employed worked in places as far afield as Lyon, Paris and Geneva, and travelled by car, train and plane. Those working permanently far afield may be using their Grenoble address as their main place of residence, when it should be more properly considered as a second home (Gottmann1976).

Table 8.3. Characteristics of heads of households: sample survey Grenoble 1968

Sex and marital status:		%
Males:	married	65
	single	6
	widowed	2
	divorced	1
	total	74
Females:	married	3
	single	8
	widowed	11
	divorced	4
		26
	Total population	100
		%
Age		
	0 - 19	1
	20 - 39	38
	40 - 59	36
	60+	25
		100
		%
Mode of travel to work		
	Car	24
	Bus	4
	Train	1
	Foot	18
	Cycle	19
	Plane	1
	Not stated/inactive	33
		100

8.1 MIGRANTS FROM ABROAD

Almost a quarter of Grenoble residents sampled were born abroad, and in an amazing variety of countries. This apparently large proportion compares to a total of about 15,000 foreigners in the city according to the 1968 census, which is less than 10% of the total population. However this high proportion of foreign-born may be accounted for in two ways: in the case of newer immigrant groups, there are many more single-person households than for the average population, because of the presence of young single male labour migrants. More importantly, there is not necessarily complete concordance between foreign-born and foreign nationality; many of the North Africans are of French nationality, and a high proportion of the older immigrant groups - Italians, Poles and some Spaniards - are of naturalised French nationality.

The countries of birth are shown in Table 8.4. The largest group of migrants is the old-established Italian grouping, accounting for over one-third of the foreign-born. Another third comes from North Africa (Algeria, Tunisia and Morocco), whereas the remaining third comes from over 30 other countries, the largest groups from Spain and Poland.

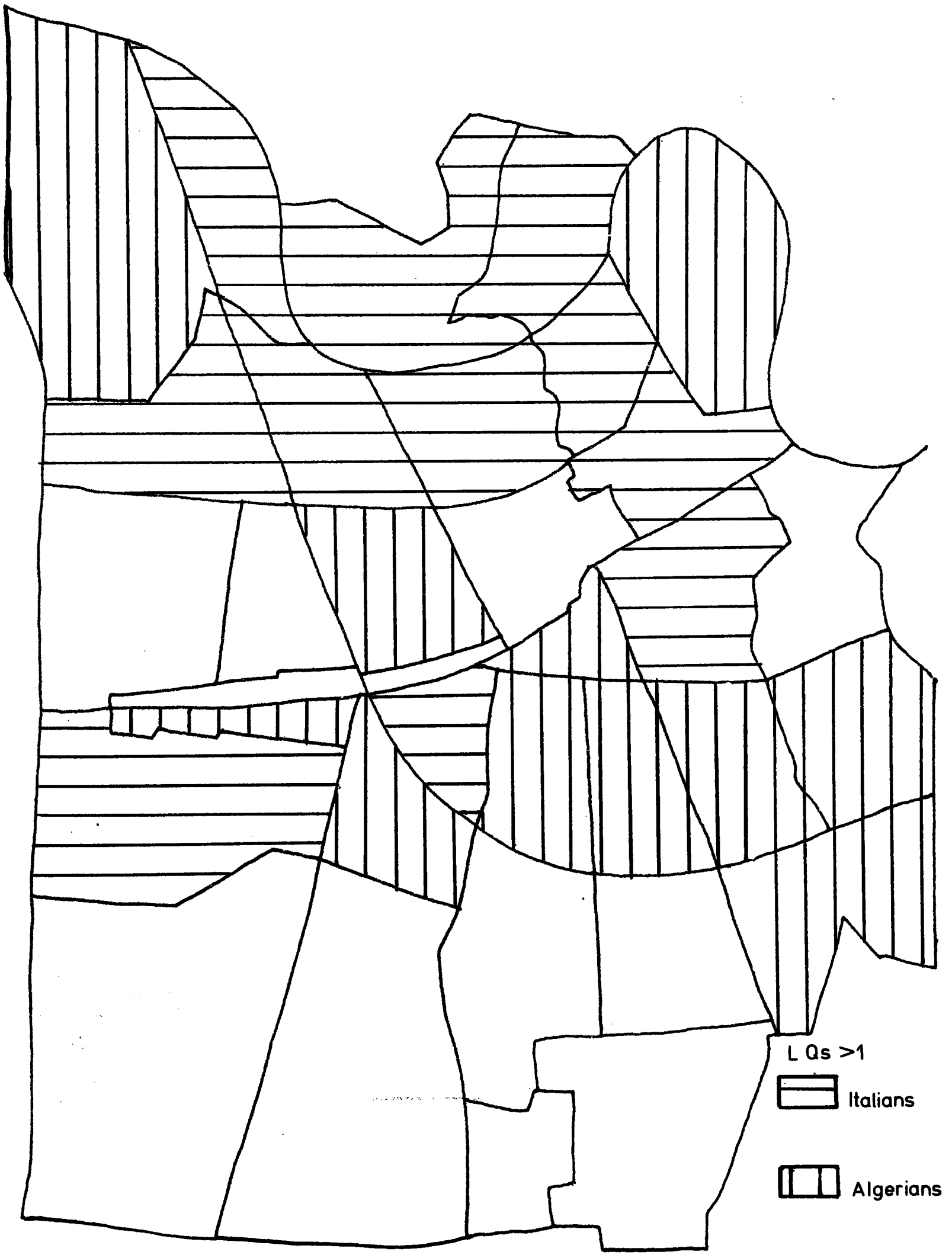
Fig. 7.8 showed the distribution of foreigners by nationality in each quartier; with substantial numbers

31% and 41% respectively recorded in the old quartiers of Notre Dame and St. Laurent. The sample taken shows 41% and 43% foreign-born in these two quartiers; the slightly larger proportion being explicable by the factors outlined above, of the difference between foreign-born and foreign nationality. From this correspondence of data from the two sources it would appear that the sample is sufficiently large to provide a basis for satisfactory description of migrants and their location and characteristics.

The foreign-born population is to be found in every quartier of the city (Fig.8.1) with Italians and Algerians represented in each quartier, although with distinctive distributions. The older migrant group - the Italians, are to be found in the declining core areas, but have diffused outwards from this centre in a pattern reminiscent of the diffusion of immigrant groups from central cities in North America (Rose). Algerians are to be found in the newer suburbs, suggesting that their pattern has been rather different, perhaps they are sufficiently indistinguishable from the rest of the population - in language, colour and socio-economic status that they can go to the newer areas of the city, like any other newcomer.

Much larger numbers of foreign-born were found in the newer suburbs of Bajatière, Chatelet and Teyssière than expected from the numbers of foreigners recorded in

Fig. 8.1 Foreign-born population: Location Quotients



the 1968 census, and even more surprisingly in the predominantly middle-class areas of Ile Verte and Championnet (see Fig.8.1). It is, however, immediately apparent that the foreign-born element in these areas is predominantly of North African origin, and so more likely to be of French nationality, and therefore would not appear as foreign in the census figures. The foreign composition of the quartiers of the old city is dominated by Italians, the majority of whom have retained their Italian nationality despite some recent naturalisations.

The distribution of Tunisians and Spaniards is also widespread, but with no noticeable concentrations except in the 'working class' areas of Teyssière and Chatelet for Spaniards, and in Teyssière and Gare for Tunisians. The numbers of other national groups are too small for any general comment to be made about their distribution.

The characteristics of the total foreign-born population are summarised in Table 8.5. There is a high proportion of males, characteristic of foreign labour migrants, but it is surprising that there are so many married males, but this includes all nationalities including those with a normal family structure. Furthermore there is some evidence that not all the married men were accompanied by their families.

The foreign-born population is younger than average, but it is well-distributed between the age groups. The

Table 8.4 Sample survey: countries of birth

		% of foreign-born
Europe		
Italy	176	37.9
Spain	42	9.1
Portugal	5	1.1
Switzerland	7	1.5
Netherlands	1	0.2
West Germany	7	1.5
Great Britain	1	0.2
Belgium	2	0.4
Denmark	1	0.2
Austria	2	0.4
Hungary	1	0.2
Turkey	8	1.7
Greece	6	1.3
Yugoslavia	5	1.1
Bulgaria	2	0.4
Rumania	2	0.4
U.S.S.R.	4	0.9
Poland	12	2.6
Africa		
Algeria	102	22.0
Tunisia	29	6.3
Morocco	24	5.2
Egypt	1	0.2
Chad	1	0.2
Gabon	1	0.2
Ghana	1	0.2
Congo (Zaire)	3	0.6
Africa (not specified)	1	0.1
Réunion	1	0.1
South and Central America		
Gaudeloupe	4	0.9
Martinique	1	0.2
Argentina	1	0.2
Other		
Iran	1	0.2
U.S.A.	1	0.2
China	2	0.4
Indo-China	6	1.3
Total	464	100.0*

*This does not add up to exactly 100%, because of rounding.

Table 8.5 Characteristics of the foreign-born population

Total No. 464

Sex and marital status

		%			%
Males:	married	70	Females:	married	3
	single	8		single	3
	widowed	2		widowed	10
	divorced	2		divorced	2
		82			18

Age

	%
0 - 19 years	1
20 - 39 years	40
40 - 59 years	38
over 60 years	20
	100

Socio-Professional Status

	%
Farmers and agricultural workers	0.5
Managers and Directors	5
Senior Executives	2
Executives	6
White collar workers	20
Workmen	49
Domestic workers	2.5
Students	3
Army, Police	3
No occupation, retired, not stated	9
	100.00

Mode of travel to work

	%
Car	21
Bus	6
Train	1
Foot	15
Bicycle/Moped	26
Not stated/ not applicable	31
	100

Place of residence, 1962

	%
Grenoble	62
Isère	7
Rest of France	7
Abroad	24
	100

most striking feature of their socio-economic and demographic characteristics is the very high proportion of working class. This low occupational status of the foreign-born population is reflected in their mode of travel to work; the majority going by moped/cycle or foot, both cheap methods of travelling relatively short distances.

A majority of the foreign-born population moved to Grenoble before 1962, but a significant minority - about one-quarter - have moved since 1962. The majority of these were North Africans who entered Isère in their thousands between 1962 and 1964. As stated previously they are almost all of French nationality - in fact about 90%.

As the foreign-born population is from such a wide variety of origins it was decided to separate the Algerians (and Tunisians and Moroccans) from the other foreign groups to compare their characteristics. The comparison was done by means of simple contingency tables whereby the numbers in crosscutting categories are compared: e.g. the total number of Algerians compared to the total of females in the population, as in the example below:

Table 8.6. Test for significant difference in the number of Algerian females compared to all females born abroad

	Male	Female	Total
Algerians	87	(15)	102
Others born abroad	293	69	362
Total	380	84	464

$$\frac{102 \times 84}{464} = 18.5$$

This figure of 18.5 is thus the expected number of Algerian women given the overall proportion of women born abroad. The observed values can then be tested against the expected values by χ^2, which in this case proved not significant. In other words, the Algerians had less female heads of households than expected, but this was not statistically significant.

Although no significant differences between Algerian-born and other foreign-born were observed some statistically significant differences did emerge. Firstly the Algerian-born were observed to have a significantly older population than average, particularly in the 40-60 age group. This is in part because the Algerian-born group includes many who are not strictly labour-migrants who returned to France particularly in the 1960s. Perhaps as a corollary of age, more Algerians than expected used cars to travel to work, although this difference was not statistically significant. Differences in socio-economic groupings were difficult to establish. In this 2-way contingency table, it was necessary to divide the S-P groups into e.g. 'professional' and other; 'workmen' and other. Split in this way there was no significant difference in occupational status, although the Algerian-born had more professionals and fewer workmen than expected. However, there was a significant difference in the proportion of 'cadres moyens' and 'employés' who were over-represented in the Algerian community: indeed

50% of all actively employed Algerians were in these two categories, compared to 26% for all foreign-born.

These two categories consist of minor clerical positions and a whole host of semi-skilled jobs; sales representatives, insurance agents, chauffeurs for the Préfecture. If the Army and police were included also, the representation of the Algerians in this type of job is seen to be very dominant. The Algerian-born have only an average proportion of manual workers. The few in the managers' and directors' category tend to run their own small business - florists, watchmakers, butchers.

Thus the Algerian-born community form a distinct 'middle-class' grouping within the foreign-born group. The migrants from other countries also fall into two distinct groups. Firstly the Italians and the other migrants from the labour reserves of Southern Europe; these are providing 'replacement labour' (Peach 1966) and are employed in manual occupations. The other group of migrants consists of students and highly skilled workers e.g. research chemists and physicists. These come from a wide variety of countries, ranging from Indo-China to the Congo, Guadeloupe or Bulgaria, to the U.S.A., Germany and England. These are the people attracted to the research centres, university faculties, and scientific industries so characteristic of Grenoble since the war.

The socio-economic characteristics of each grouping is shown in Table 8.7.

Table 8.7 Socio-Professional Characteristics of foreign-born population, classified by countries of origin

	Total foreign born	Algerians, Moroccans, Tunisians	Italians, Spaniards, Poles & Southern Europeans	Other
	%	%	%	%
Farmers and Agricultural workers	0.5	0	0	0
Managers and Directors	5	2	6	8
Senior Executives and Professionals	2	1	0.5	6
Technicians and executives	6	9	2	13
Clerical workers	20	41	14	19
Workmen	49	32	64	10
Domestic workers	2.5	1	3	0
Students	3	1	0.5	25
Army and Police	3	7	0	0
No occupation, Retired, Not stated	9	6	10	6
	100	100	100	100

Migrants from overseas who moved to Grenoble after 1962 consisted very largely of Algerians (75 or 136), the majority of whom moved in 1962 and 1963. The rest came from 22 other countries, listed in Table 8.5. Many of these were born abroad and have been included in the preceding description.

The characteristics of these newer migrants are nevertheless examined in Table 8.8, and may be compared with the total foreign-born population (Table 8.5).

Table 8.8 Characteristics of migrants from abroad 1962-68

Sex and marital status	%	of whom Algerians				
Males:			**Females:**			
married	73	69		married	3	3
single	11	13		single	3	4
widowed	2	2		widowed	4	5
divorced	1	1		divorced	3	3
	87	85			13	15

Age	%	of whom Algerians
0-19 years	2	2
20-39 "	55	45
40-59 "	30	37
Over 60 "	13	16
	100	100

Socio-Professional Status	%	of whom Algerians
Managers and Directors	9	4
Senior Executives	7	4
Executives	10	16
White collar workers	29	38
Workmen	25	17
Domestic workers	1	1
Students	7	1
Army, Police	5	7
No occupation, Retired, not stated	7	12
	100	100

Mode of travel to work	%	of whom Algerians
Car	29	32
Bus	6	5
Train	0	0
Foot	24	25
Bicycle/moped	23	18
Not applicable/Not stated	18	20
	100	100

Table 8.9 Countries of origin of migrants from abroad 1962-68

	%
Africa	
Algeria	55
Tunisia	7
Morocco	10
Congo (Zaire)	1
Cameroons	1
Ivory Coast	1
Senegal	1
South and Central America	
Guadeloupe	1
Europe	
Italy	4
Spain	3
Portugal	1
Switzerland	1
West Germany	3
Great Britain	1
Belgium	1
Denmark	1
Yugoslavia	2
Bulgaria	1
Other	
Iran	1
U.S.A.	1
Vietnam	1
India	1
Pakistan	1
	100

The recent migrants have a fairly comparable sex structure but in general a younger age distribution[1], which is not surprising as younger people have greater propensities to migrate (see Chapter 1). However, the Algerian population is relatively older[1], because of the movement of older soldiers and businessmen back to France. The socio-professional status is dominated by the Algerian contingent, with relatively few workmen, but a high proportion of clerical workers.

Thus the foreign population is very cosmopolitan, and its differing characteristics reflect the diverse origins. Furthermore the different types of migrant search out a different part of the city in which to settle.

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[1] These differences are statistically significant at the 1% level.

8.2 MIGRANTS FROM THE REST OF FRANCE

Migrants from other departments of France form the largest proportion of the heads of households sampled, 39% of all householders. These migrants come from 83 of the 94[1] departments of France, the distribution of which is shown in Fig. 8.2a and b, and in Table 8.10.

Table 8.10 Departments of origin sending the largest numbers of migrants to Grenoble

	No. of migrants	%
Savoie	95	12.3
Rhône	64	8.3
Ville de Paris	62	8.1
Drôme	52	7.8
Hautes-Alpes	41	5.3
Haute-Savoie	30	3.9
Ain	26	3.4
Saône et Loire	21	2.7
Ardèche	20	2.6
Nord	20	2.6
Bouches du Rhône	18	2.3
Loire	16	2.1
Var	13	1.7
Alpes Maritimes	13	1.7
Gard	12	1.6
Vosges	11	1.4
Meurthe-et-Moselle	11	1.4

This movement is from-birth migration and so could have occurred at any time between approximately 1918 and 1962 (65% moved before 1962). It is perhaps the age of this movement which is reflected in the continued movement

[1] excluding Isère

Fig. 8.2 a Migrants from the rest of France (Origins)

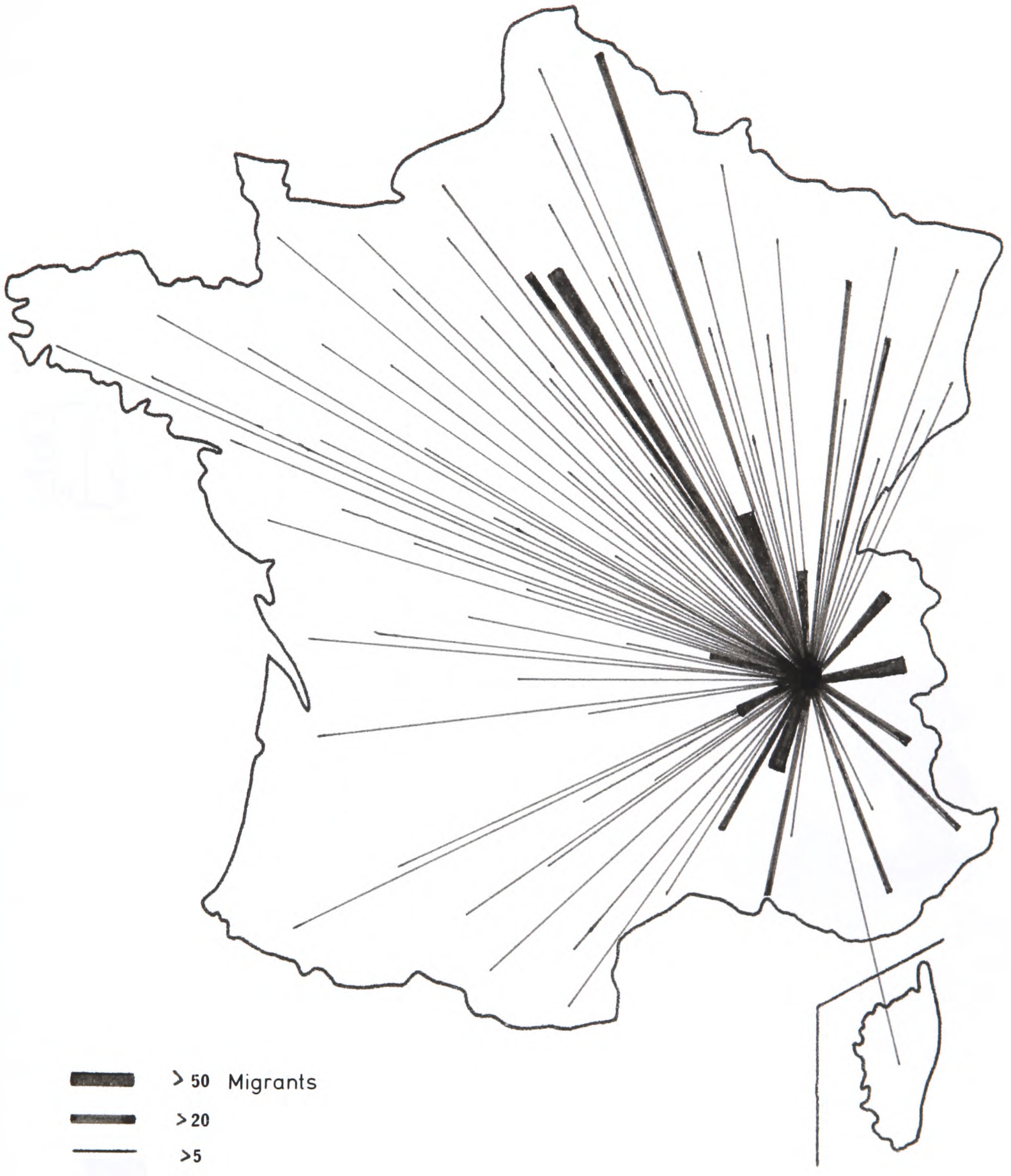
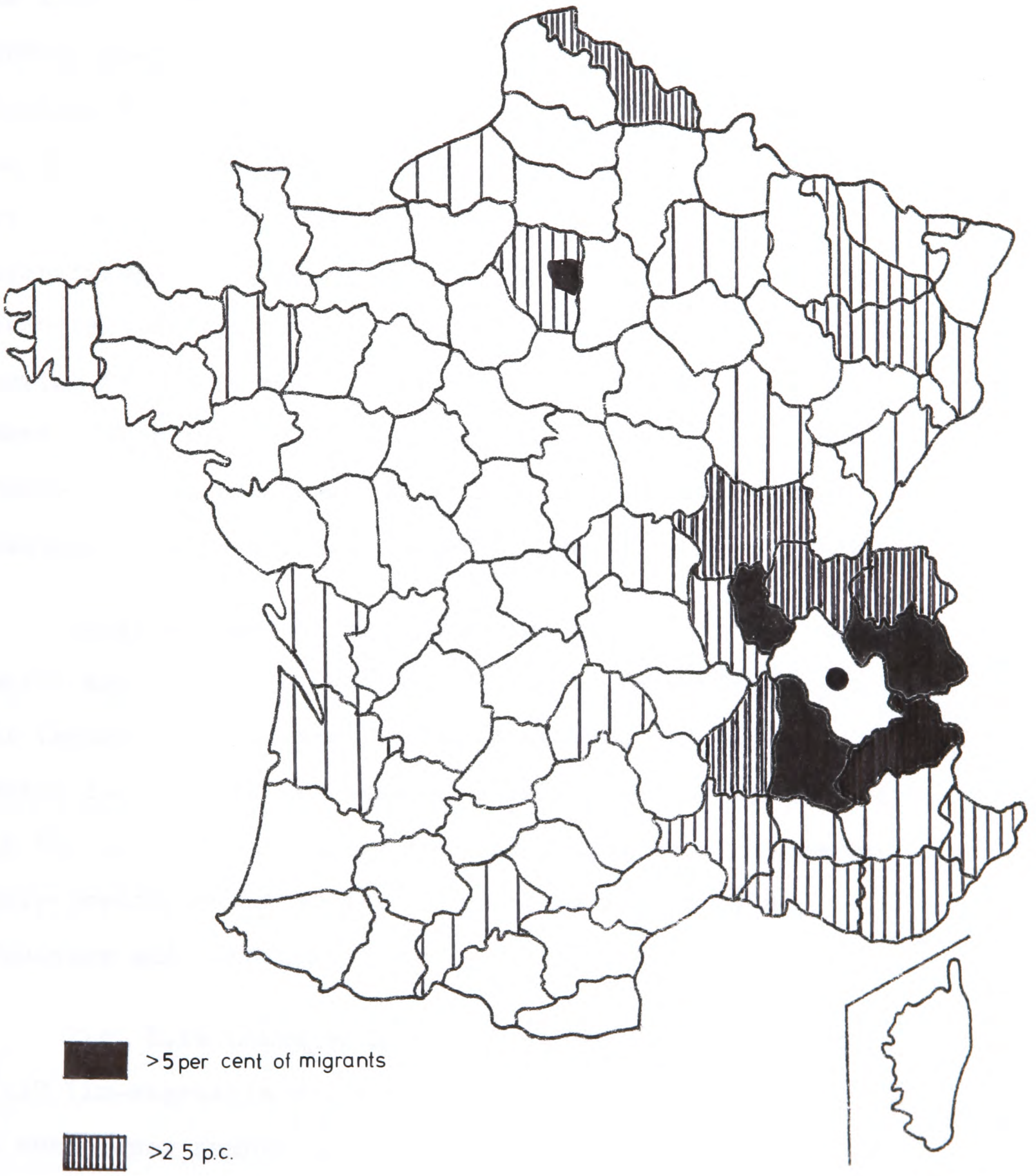


Fig. 8.2 b Migrants from the rest of France (Origins)



from the Alps to Grenoble. Over 20% of migrants come from the three departments of Savoie, Haute-Savoie and Hautes-Alpes, which with the Alpine areas of Isère are the traditional source areas of Grenoble's labour. Almost as large a proportion comes from the 'avant-pays' of the Rhône-Alpes, but in relation to the population of the sending departments, it is not so significant a percentage as the Alpine movement. There is a strong distance effect with the neighbouring departments sending a large proportion of migrants. There is, however, also a marked sectoral pattern evident with larger numbers of migrants coming from N.E. and S.E. than from the West and South-West. This reflects the 'corridor effect' of the Rhône-Saône valley, and the 'blocking' effect of the Massif Central, now in any case heavily denuded of population.

Large numbers of migrants come from the Paris region; which may in part be attributed to the decentralisation of industry and scientific research from the capital. Those departments not sending migrants are mainly located in the South West and are the areas from which migrants move predominantly to the intervening locations of Toulouse and Bordeaux.

Fig. 8.2b makes an interesting comparison with Fig. 5.37 (in-migration velocities to Isère) showing, of course, a much lower number of migrants but the same streamlined N - S sector of origin together with Paris.

Table 8.11 summarises the characteristics of migrants from France. Their age, sex and marital status is comparable to the average, perhaps because of the high proportion which they form of the total sample. There are, however, a relatively large number of single women which may be influenced by the number of students drawn from the surrounding departments.

The socio-professional status of these migrants is relatively higher than average with particularly large numbers (40%) in the 'cadres' and managing classes (compared to an average of 30%), and a low proportion employed as workmen, labourers and domestic workers. However this higher status is not reflected in the mode of travel to work, except that relatively fewer travel to work by bicycle.

At the national level there has been a change in migratory movements over time from rural-urban movement to a more sophisticated urban to urban migration (Zelinsky 1966). It was thought useful to classify the migrants further by area of origin and by the size of the commune of birth, because migrations of different sorts might be revealed. The statistics of migrants from the rest of France could be classified by size of the commune of birth in all except 7% of cases where the commune was not stated or illegible (Table 8.12).

Table 8.11 Characteristics of migrants from the rest of France

Sex and marital status

		%			%
Males:	married	62	Females:	married	4
	single	6		single	10
	widowed	2		widowed	11
	divorced	1		divorced	4
		71			29

Age

	%
0 - 19 years	1
20 - 39 "	38
40 - 59 "	35
over 60 "	26
	100

Nationality

	%
French by birth	98
Naturalised French	1
Foreign	1
	100

Place of residence 1962

	%
Grenoble	65
Isère	6
Rest of France - department of birth	13
other departments	14
Abroad	2
	100

Socio-Professional Status

Agricultural	1
Managers and Directors	9
Senior Executives	12
Executives	17
White collar workers	24
Workmen	16
Domestic workers	1
Students	4
Army, Police	4
No occupation, retired, not stated	12
	100

Mode of travel to work

	%
Car	26
Bus	4
Train	1
Foot	19
Bicycle/moped	15
Plane	1
Not stated/Not applicable	34
	100

Table 8.12 Migrants from the rest of France, classified by size of commune at birth

Communes with a population of:	% migrants
over 1 million	15
50,000 - 999,999	26
10,000 - 49,999	39
2,000 - 9,999	9
Rural communes less than 2,000	4
Not stated	7

A relatively high proportion of migrants come from the very largest cities; influenced undoubtedly by the proximity of both Lyon and Marseille, which together with Paris sent 63 migrants. Other large cities also provide a substantial number of migrants. There was no significant difference between the characteristics of these two groups of migrants. However when taken together and compared to migrants from rural and small urban communes these migrants ae seen generally to be of higher socio-economic status with 25% in the Managers', Directors', Professional and Administrative categories compared to 21% for the overall group, and only 10% in the workmen and domestic category (Table 8.13). It would thus appear that this group of inter-urban migrants are predominantly composed of the higher qualified, who have a high propensity to migrate (Prothero) and are likely to move progressively from town to town taking up vacancies and promotions as they occur.

On the other hand the migrants from smaller communes tend to be more working class; a difference significant at the 95% level. There is no significant difference in age sex or marital status, although there are marginally more females in the inter-urban category, and this population is also slightly younger.

With the migrants classified in terms of their department of origin it was thought that the traditional areas of supply - Savoie and the High Alps - might send migrants of a different type than those of other areas. The characteristics of the migrants from Savoie, Haute-Savoie and Hautes-Alpes however show very little evidence of traditional rural-to-urban migration. They have a high proportion of students which offset the slightly above average proportions of retired farmworkers, labourers and domestic workers.

Table 8.13 Socio-professional and age characteristics of migrants from the rest of France classified by size of commune of birth and area of origin

Age	All migrants	From large urban communes	From small urban and rural communes	From the Alpine area
0 - 19 years	1	1	1	1
20 - 39 years	38	39	36	34
40 - 59	35	36	37	37
60+	26	24	26	28
	100	100	100	100

Table 8.13 (continued)

Socio-Professional Status

	All	Large cities	Alps	Small urban & rural
Farmers, retired agricultural workers	1	0	2	2
Managers and Directors	9	10	9	8
Senior Executies and Professionals	12	15	11	11
Executives and Technicians	17	20	15	15
Clerical workers	24	30	20	16
Workmen	16	9	18	20
Domestic workers	1	1	1	2
Students	4	3	4	6
Army, Police	4	2	5	5
No occupation, Retired, not stated	12	10	15	15
	100			

The location of the migrants from France within the city is shown in Fig. 8.3. This shows that the migrants are predominantly located in the newer suburbs to the West and South of the city. However the location of the Alpine migrants (Fig.8.4) suggests that this is an older movement: they are dominant in the older city centre as well as some of the less salubrious newer suburbs. The Alpine migrants are predominantly from smaller urban centres and rural areas, with the only exception being those from Chambéry. On the other hand the migrants from large cities being of higher socio-professional status are over-represented in the newer areas and in some of the more fashionable city areas.

Fig. 8.3 Migrants from the rest of France (destinations)

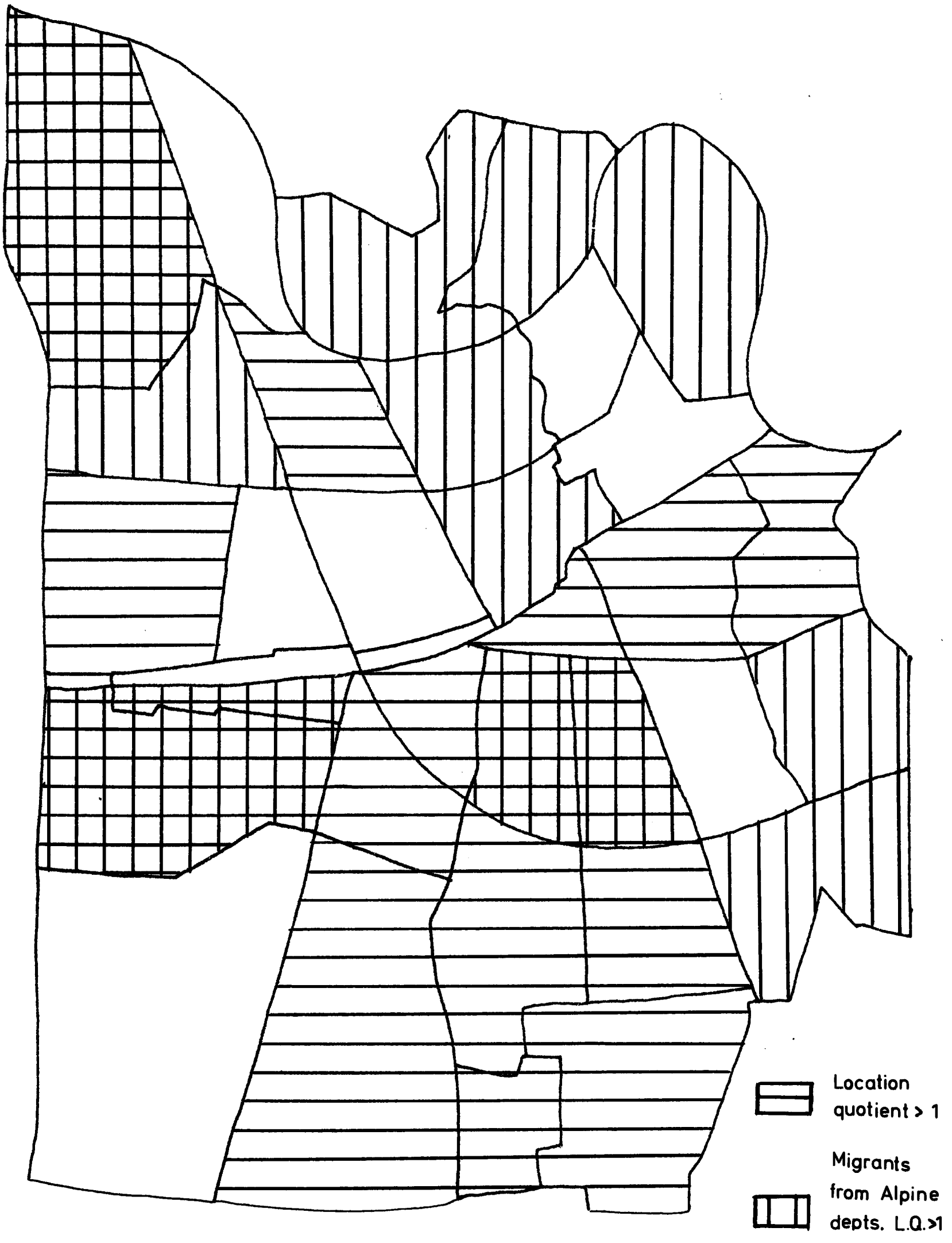
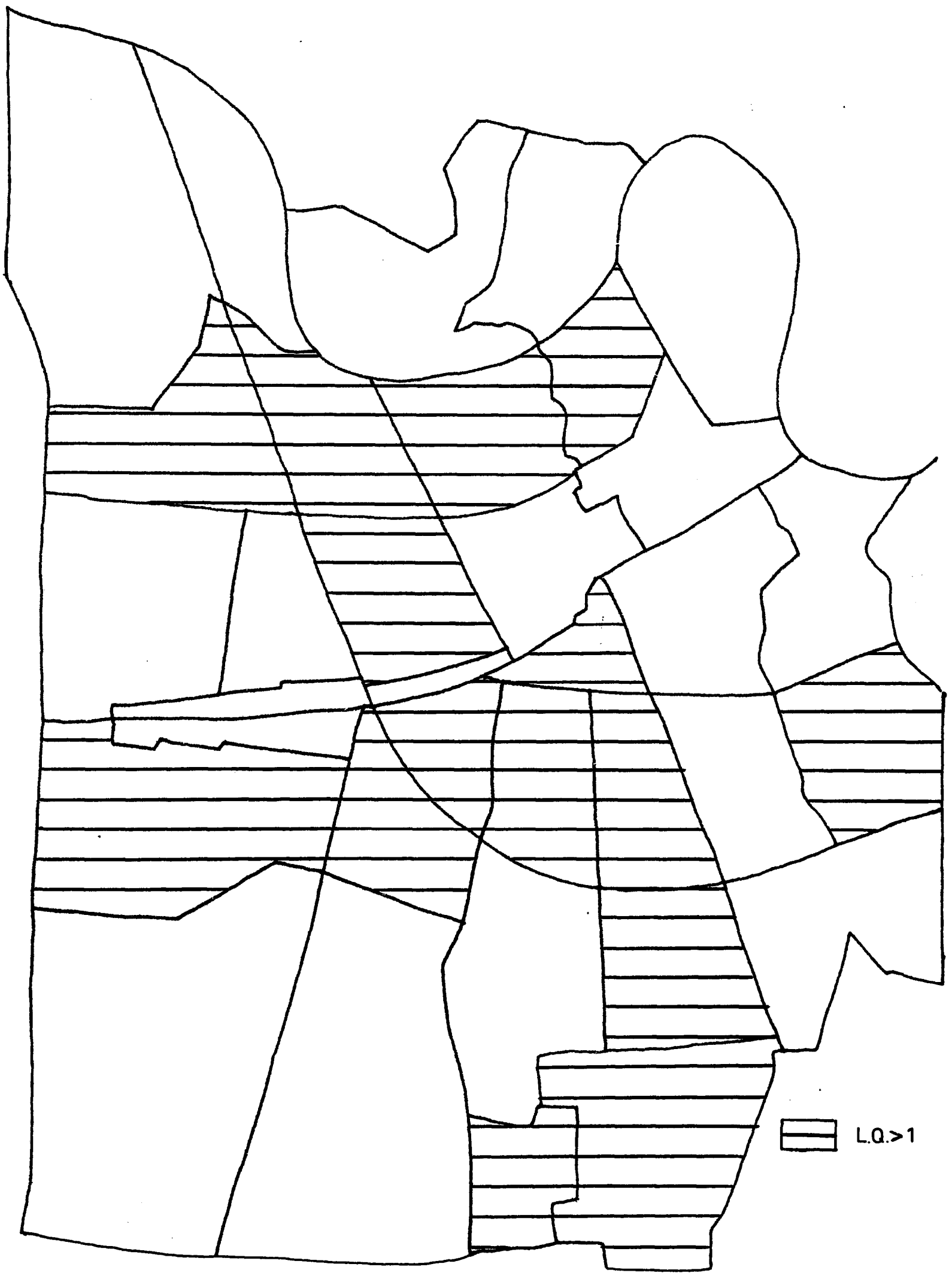


Fig. 8.4 Migrants from the large cities



Thus the migrants from France are not so clearly defined on either socio-economic or locational terms as the more visible foreign minority groups. However, a distinction has emerged between the traditional Alpine migration, and the newer high status migrants - particularly from larger cities. This discrepancy is highlighted when the migrants over the period 1962-68 are considered. The percentage of migrants from different departments is shown in Table 8.14 and Figs. 8.5a and b.

Table 8.14 Departments of origin 1962-68 of migrants to Grenoble

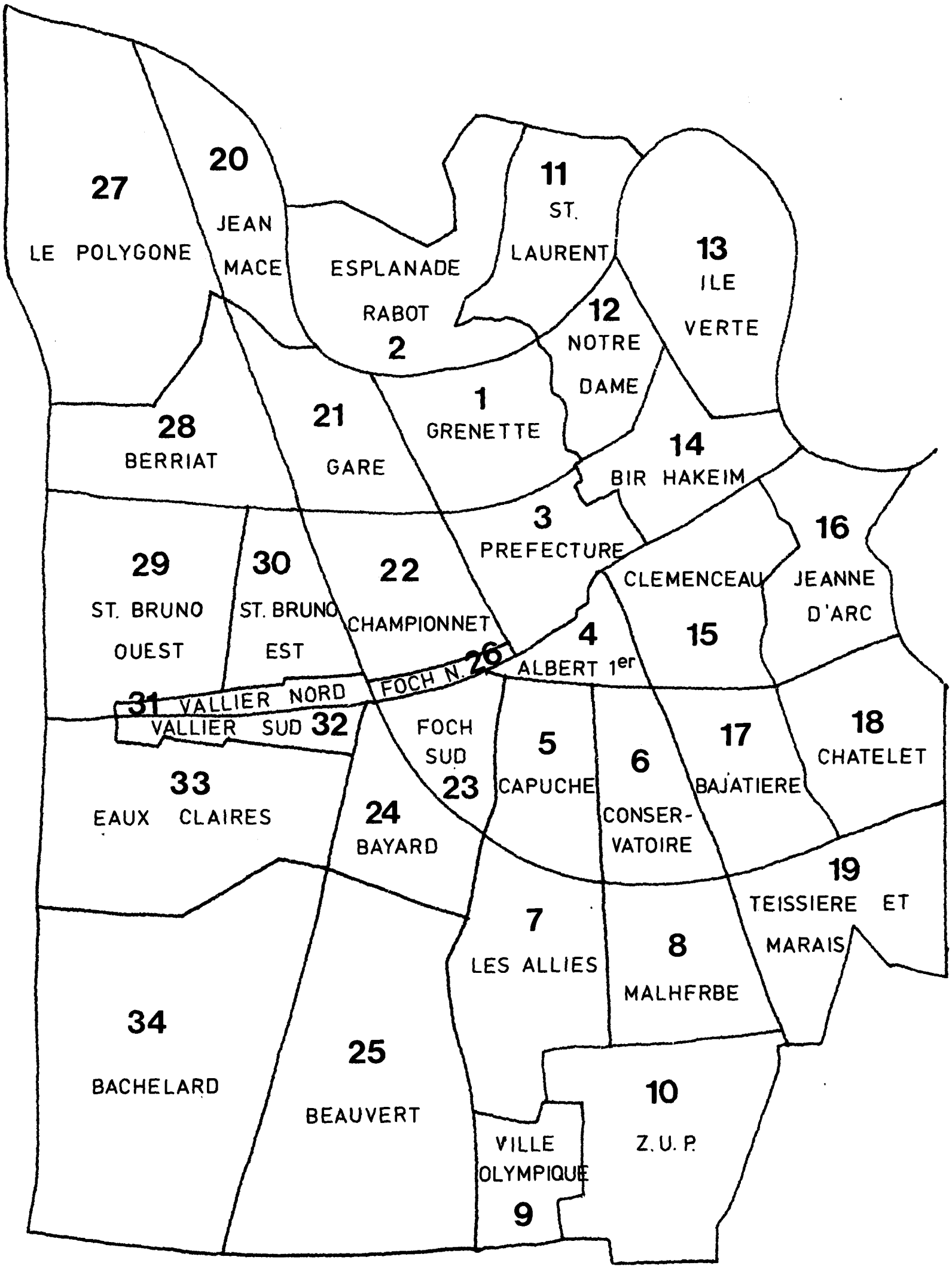
	1962-68	From birth
Ville de Paris	12.9	8.1
Savoie	8.5	12.3
Rhône	7.7	8.3
Savoie - Haute	7.3	3.9
Drôme	6.9	6.8
Bouches du Rhône	4.4	2.3
Var	4.0	1.7
Ain	3.2	3.4
Alpes - Hautes	2.8	5.3
Alpes-Maritimes	2.8	1.7
Seine et Oise	2.8	1.0

In general the departments with large urban centres (e.g. Paris, Alpes-Maritimes, Bouches-du-Rhône) sent relatively more migrants than previously, while the traditional emigration areas of Savoie and Hautes-Alpes reduced their contribution. Haute-Savoie, however, doubled the number of migrants to Grenoble, partly because of a

Fig. 8.5 Origins of migrants from the rest of France



Fig. 8.5b Grenoble quartiers



high number of students and partly perhaps due to its increasing rate of urbanisation, and thus greater numbers of inter-urban migrants.

Table 8.15 shows that these recent migrants are significantly younger and more likely to be single than the earlier migrants from France. They therefore have a low rate of inactivity, and a very high proportion of students. This grouping also has an extremely high socio-professional status, and although there are few in the managers and directors category, there are very many clerical and administrative workers, scientists and technicians. This is reflected in the high proportion driving to work despite their youthful age. The origins of these migrants is overwhelmingly urban with 57% coming from large cities.

The location of these migrants within the city is shown in Fig. 8.6 and reveals a very marked concentration in the newer suburbs to the South of the city, accentuated by the presence of student hostels in these areas.

Table 8.15 Characteristics of migrants from the rest of France 1962-68

Sex and marital status

		%			%
Males:	**married**	61	**Females:**	**married**	3
	single	12		**single**	17
	widowed	0		**widowed**	2
	divorced	1		**divorced**	4
		74			26

Age

	%
0 - 19 years	2
20 - 39 "	69
40 - 59 "	21
over 60 "	8
	100

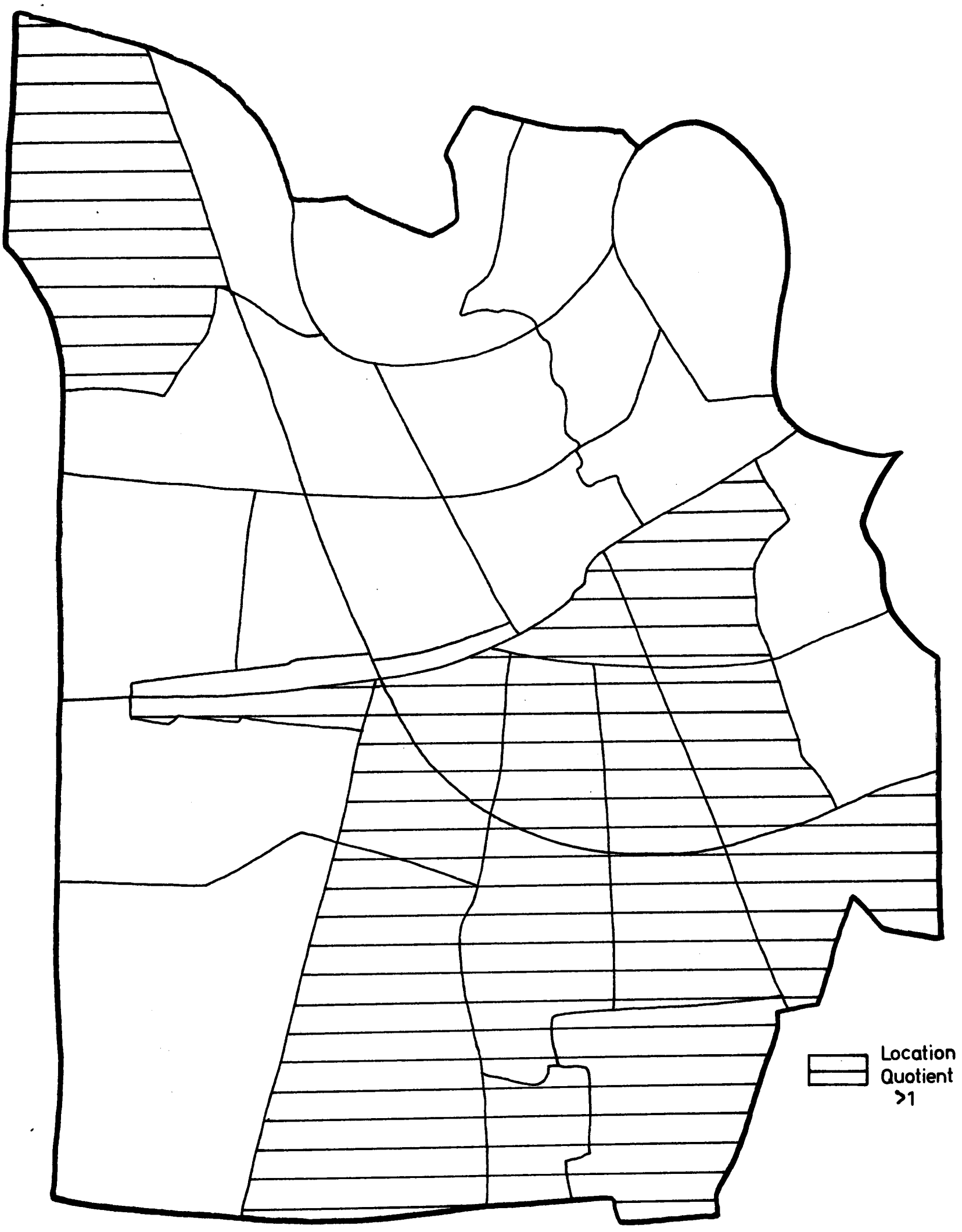
Socio-Professional Status

	%
Farmers, farmworkers & retired	0
Managers and Directors	4
Senior Executives and Professionals	10
Executives and Technicians	19
Clerical workers	37
Workmen	5
Domestic workers	0
Students	11
Army, Police	6
Retired, No occupation, not stated	8
	100

Mode of travel to work

	%
Car	40
Bus	10
Train	1
Foot	21
Bicycle/moped	13
Plane	0
Not stated/not applicable	15
	100

Fig. 8.6 Migrants from the rest of France 1962-68



8.3 MIGRANTS FROM ISERE

Despite the widening attraction of Grenoble to migrants from other departments 441 of the sample were born in other communes of Isère. The characteristics of these migrants are listed in Table 8.16. They show a slightly higher proportion of females and a slightly older population than average, but this difference is not significant. Their socio-professional distribution and their mode of travel to work is the most normal of all the migrant groups thus far considered, with a wide variety of occupations. Of the French migrant groups they have the most balanced socio-economic composition, with a higher proportion of workmen than any group except those from abroad.

However when this group is broken down by commune of origin the same type of sub-groups exhibited by the migrants from the rest of France can be identified. By reference to the A.I.D. the migrants from low altitude/ low emigration communes were compared to those from the high altitude/high emigration communes. However, this exeluded a large number of migrants, particularly from small towns and from the neighbouring communes of the agglomeration, and possibly as a result of the small size of this sample no significant differences at all were found.

Table 8.16 Characteristics of migrants born in Isère

Sex and marital status

		1962-68					
Males:	married	63	67	Females:	married	3	7
	single	5	3		single	10	10
	widowed	2	2		widowed	14	5
	divorced	1	1		divorced	2	5
		71	73			29	27

Age

	%	1962-68
0 - 19 years	2	4
20 - 39 "	35	64
40 - 59 "	37	24
over 60 "	26	8

Socio-Professional Status

		1962-68
Farmers, farmworkers and retired	1	0
Managers and Directors	11	10
Chief Executives and Professionals	7	7
Executives, Technicians	15	19
Clerical workers	27	35
Workmen	22	19
Domestic workers	1	4
Students	2	3
Army, Police	1	0
Retired, No occupation, not stated	13	3
	100	100

Mode of travel to work

Car	24	40
Bus	3	5
Train	1	1
Foot	18	30
Bicycle/moped	17	16
Plane	0	0
Not stated/Not applicable	31	8
	100	100

Nationality

	%
French	99
Naturalized	1
Foreign	0
	100

Place of residence 1962

Grenoble	79
Isère: commune of birth	6
other commune	11
Rest of France	3
Abroad	1
	100

Therefore the contingency tables were reworked using the migrants from all communes at low altitudes (as defined in the A.I.D. under 521 metres at the chef-lieu of the commune) and those from all high-altitude communes. The high altitude communes have sent more female migrants and relatively fewer professionals, and consequently have more migrants walking or cycling to work; but again these differences were not significant.

However, there were significant differences (at the 95% level) between those migrants from communes with a negative migration balance 1962-68 and those from communes with a positive migration balance. Those from emigration communes have a significantly lower socio-economic status than those from communes with a healthy surplus of in-migrants. This suggests that the migrants from in-migration areas (which include most of the agglomeration) correspond to the 'inter-urban' migrants who tend to be migrants moving for promotion, for self-improvement or as a response to changes in life cycle. On the other hand the migrants from emigration areas correspond to those from the smaller communes and are more likely to be displaced agricultural workers and artisans moving in response to the changing structure of agriculture and industry discussed earlier in this thesis.

The migrants from Isère are drawn from 159 communes

of the 532 communes of the department. Of these a substantial minority (19%) are not genuine migrants, as they were born in the neighbouring commune of La Tronche, which contains the maternity hospital for the district. The other communes contributing the largest number of migrants are listed in Table 8.17.

Table 8.17 Communes of Isère sending migrants to Grenoble

		%
Voiron	18	4.0
Fontaine	16	3.6
Bourgoin-Jallieu	8	1.8
Eybens	8	1.8
La Motte d'Aveillans	7	1.6
La Mure	7	1.6
St. Martin d'Hères	7	1.6
Le Bourg d'Oisans	6	1.4
St. Egrève	6	1.4
Villard Bonnot	6	1.4
Villard de Lans	6	1.4
Le Grand-Lemps	5	1.1
Jarrie	5	1.1
Livet-et-Gravet	5	1.1
Rives	5	1.1
St. Laurent du Pont	5	1.1
Vienne	5	1.1
Vizille	5	1.1

Table 8.18 Migrants to Grenoble from Isère grouped by area of origin

Agglomeration	160	36.3
High altitude/emigration communes	89	20.2
High altitude/immigration "	49	11.1
Low altitude/low emigration "	50	11.3
Low altitude/immigration "	93	21.1
		100.0

It is noticeable that these migrants come predominantly from the neighbouring communes of the agglomeration, or from larger towns and cantonal capitals (Bourgoin-Jallieu, Bourg d'Oisans), but there are also sizeable numbers from the declining industrial towns of the Matésine and Romanche valleys. The full pattern is shown in Fig. 8.7.

Indeed Table 8.16 shows that the migrants are fairly evenly divided in their origins. Just over a third come from the agglomeration: of the others 31% come from the high altitude communes and 32% from the low altitude communes.

The migrants from Isère are very well-distributed throughout the city as expected from their socio-economic composition. (See Fig.8.7). There are no significant differences in the distribution of migrants from different parts of the department, and neither does there appear to be any sectoral pattern according to the direction of origin.

In the period 1962-68 165 migrants arrivgd from 75 communes; their distribution by area of origin is shown in Table 8.19.

Fig. 8.7 Migrants from Isère : Location Quotients

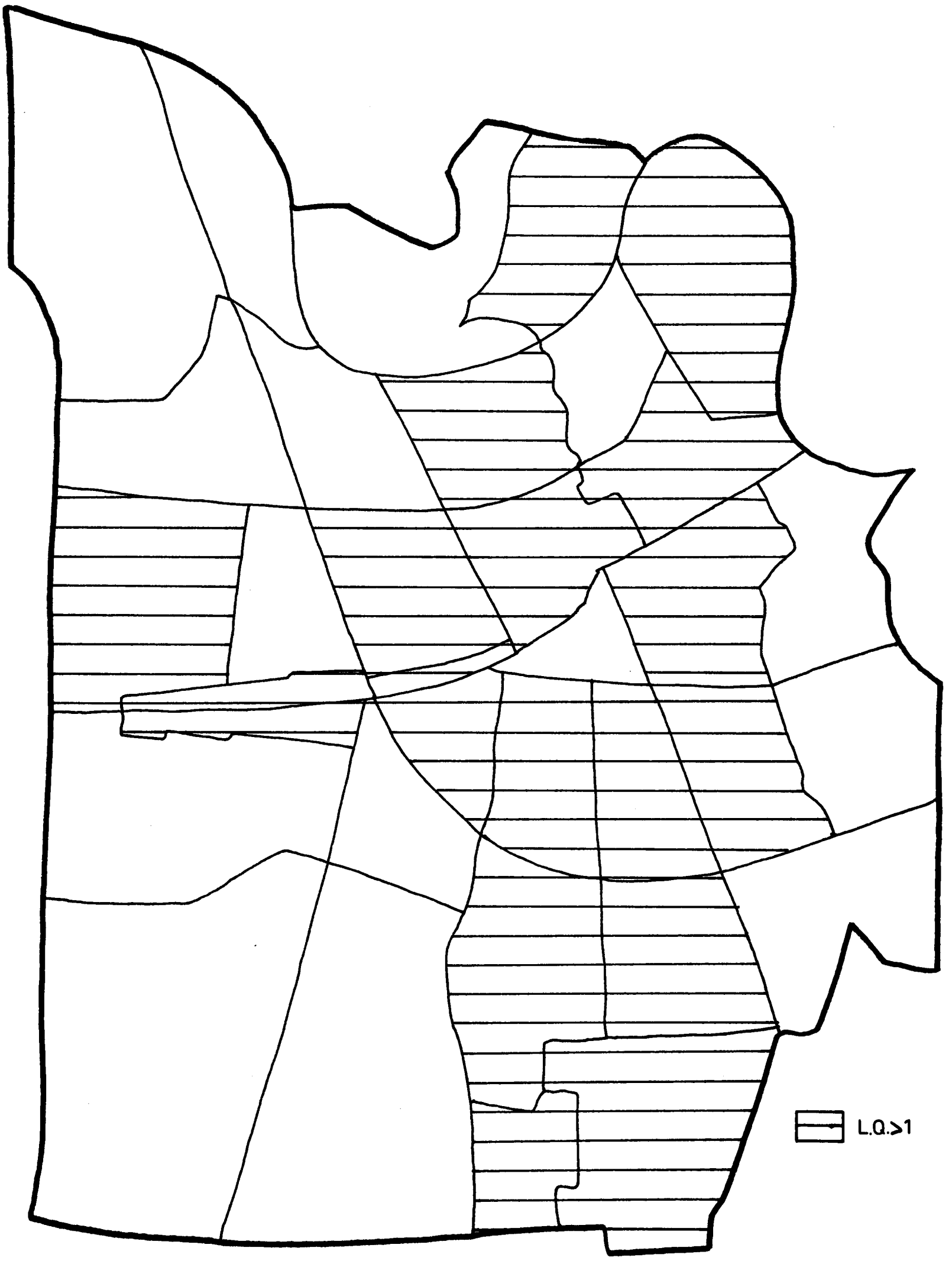


Table 8.19 Migrants to Grenoble from Isère 1962-68 grouped by area of origin

Agglomeration	91	55%
High altitude/high emigration communes		13
High altitude/in-migration "		3
Low altitude/low emigration "		15
Low altitude/in-migration "		14
		100

This table shows a changing pattern with over half the migrants moving from the neighbouring communes of the agglomeration, and a declining contribution from the high altitude communes of the Alps and Pre-Alps; emphasising the changing pattern suggested by Armand. It may obviously be accounted for by the declining labour reserves of the upland areas, and by the increase in more sophisticated migration patterns less dominated by the push of unemployment and more influenced by the attraction of status, better amenities and housing, and education.

As with the newer migrants from the rest of France they are considerably younger than those who moved earlier, and are of higher socio-economic status with a high proportion driving to work. There are however significant differences between the migrants from Isère and the rest of France 1962-68. The migrants from the rest of France have significantly more single people (at 95% level), more students and fewer workmen (significant

at 99% level). This difference is partly a difference in the perceived role of Grenoble to different groups; Grenoble is for those from Isère the local centre for jobs; for others rather more distant it has a less prosaic attraction as a technical and university centre.

8.4 THE NON-MIGRANTS

The vast majority of the non-migrants[1] have genuinely not moved from Grenoble. However 5% of this group are return migrants, who have come back to the city after national service, or after short stays in neighbouring communes and departments. All the migrants who moved to Isère in 1962 stayed within the agglomeration, and all those moving to other departments except for one, stayed within the Rhône-Alpes region.

The non-migrants make up 15% of the total sample and are to be found in every quartier of the city. However, as Fig. 8.8 shows, they are over-represented in the old town and in the quartiers West of the centre dating back to the second half of the nineteenth century. They are therefore found in the older parts of the town where the population is also older and better established, and are under-represented in most of the newer suburbs, which have a majority of recent migrants.

Table 8.20 shows that the age distribution of the non-migrant population is considerably older than any of the other groups, and that there are correspondingly a higher than average proportion of widowed women.

The age distribution also helps account for the large preportion who do not state an occupation. Their socio-economic groupings are unexceptional although with a

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[1] defined here as those people who have not moved between 1962-68

Fig. 8.8 Non - migrants

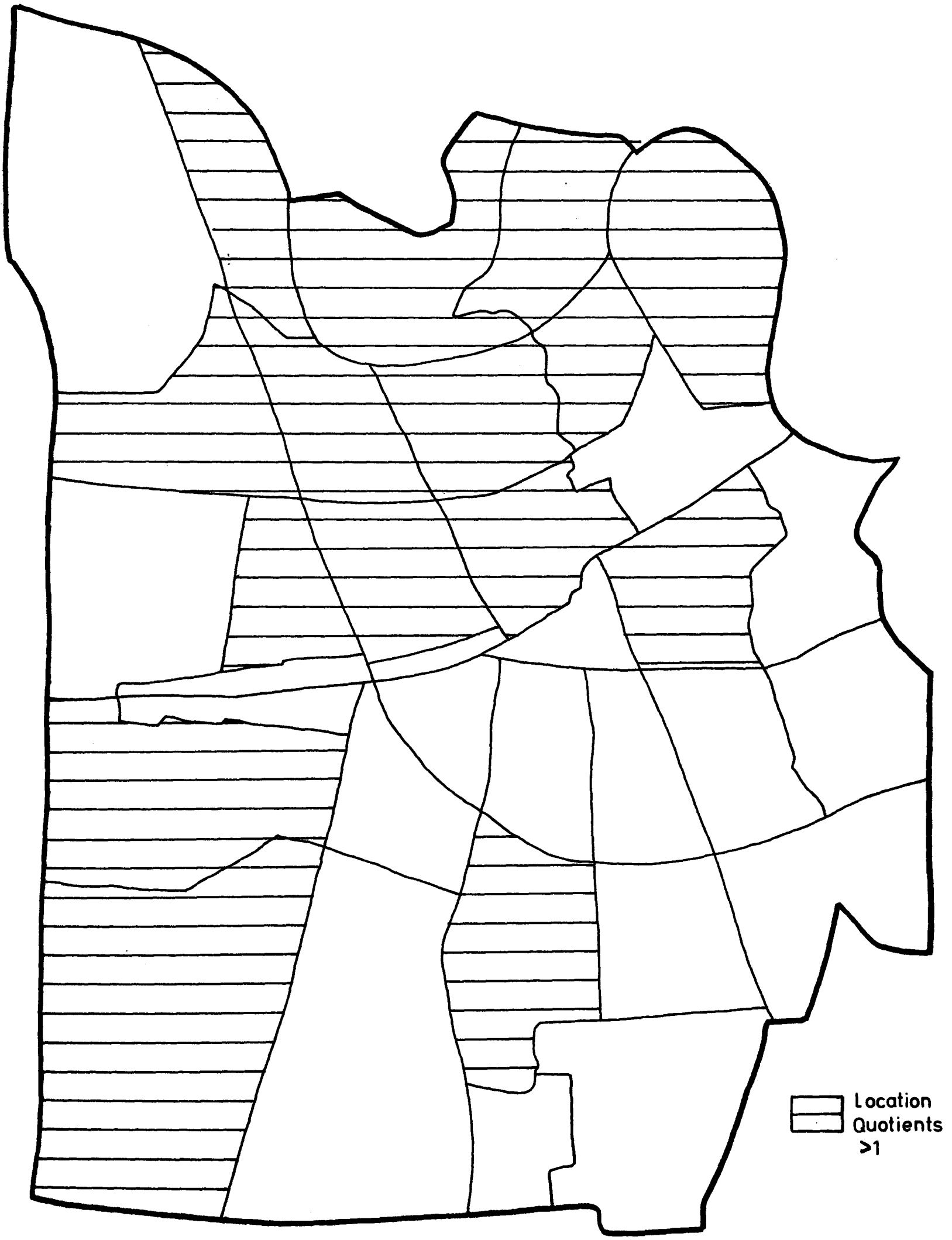


Table 8.20 Characteristics of non-migrants (born in Grenoble)

Sex and marital status

Male:	married	63	Female:	married	3
	single	7		single	7
	widowed	1		widowed	14
	divorced	1		divorced	4
		72			28

Age

	%
0 - 19 years	1
20 - 39 "	37
40 - 59 "	31
over 60 "	31
	100

Nationality

	%
French	97.5
Naturalised	2.0
Foreign	0.5
	100.0

Place of residence 1962

	%
Grenoble	95
Isère	2.5
Rest of France	2
Abroad	0.5
	100.0

Socio-Professional Groups

	%
Farmers, farmworkers and retired	1
Managers and Directors	14
Senior Executives and Professionals	6
Executives and Technicians	16
Clerical workers	24
Workmen	18
Domestic workers	2
Students	0
Police/Army	1
Not stated, retired, no occupation	18
	100

Mode of travel to work

	%
Car	22
Bus	2
Train	1
Foot	19
Bicycle/moped	17
Not stated, not applicable	39
	100

relatively high proportion in the Managers and Directors category, which may be partly due to age and therefore the degree of establishment of the workers, but is also attributable to the business acumen of the Grenoblois. Within this category non-migrants mostly run their own small businesses, whereas the migrants from the rest of France tend to be senior executives of larger firms (Labasse 1909).

A small proportion of the total sample volunteered information about changes of address within Grenoble, between 1962 and 1968, which was not strictly required by the census. These inter-urban movers may have been born anywhere from Grenoble to Greece and the pattern of moves is recorded in Fig. 8.9. At first glance the pattern is chaotic but two features become apparent; firstly there is a general movement to the periphery particularly to the newer estates at Chatelet and Teyssière. Secondly there is a noticeable movement away from the city centre itself particularly from Grenoble: this is partly as a result of urban congestion and partly due to changes in land use from residential to commercial and office use. The moves could also be due to changes in life cycle; as families expand so larger accommodation is needed.

Fig. 8.9 Intra-urban migrations **1962-68**



• Destination

8.4 CONCLUSIONS

This sample survey of 4% of heads of households in Grenoble revealed, from the individual census returns of 1968, both migrations from birth and between 1962 and 1968, and so provides a more complete picture of migrants to the city of Grenoble. It became clear from this survey that the most important differentials were those of age and socio-professional status, while the sex differential could not be adequately studied from the heads of households data. Moreover, the characteristics of age and occupation were found to differ between groups of migrants classified by place of origin.

The most distinctive sub-groups were those born abroad who could be divided into three major categories. Firstly the old-established labour migrations of Poles and Italians, consisted chiefly of manual workers who were sharply segregated in their place of residence within the city. Secondly, there had been substantial in-movement of North Africans in the 1960s, who were of a more middle-class status and lived in the newer suburbs. This rather surprising conclusion is brought about at least in part by the lack of congruence between the foreign-born and those of foreign nationality: the North African-born in fact consisting of a very high proportion of French nationality. The final foreign-born group consists primarily of young students and research workers from Europe, Africa and the

Middle East, attracted to the university research centres and industry of Grenoble.

Despite the large proportion of foreign-born migrants, the local hinterland still remains important, but is becoming progressively less so. There is still a pronounced movement from the Alpine areas but the local hinterland has become markedly sectoral, showing the influence not only of distance but also of direction. Furthermore, as the rural areas have become progressively depopulated, they have provided a lower proportion of migrants than the urban areas.

There is a marked difference in the socio-professional status of migrants from the rural and the urban areas, both from Isère and from the rest of France. The inter-urban migrants have tended to be better-qualified, corresponding to a high status group of migrants with high propensities to migrate, while the rural-urban migrants are more likely to consist of manual workers. However there is very little evidence of movement of displaced agricultural workers by this stage. As suggested in the conclusions to Chapter 4 the motivations for migration by the 1960s and 1970s are less to do with the dramatic changes in employment structure which France has undergone, but are more clearly related to the provision of urban amenities and the search for a better quality of life.

Chapter 9. SUMMARY AND CONCLUSIONS

The aims of this thesis were to go beyond the abstract statistical approach which tends to concentrate only on the distance and direction of migratory moves, and to investigate more fully the migration environment and the migrants themselves in order to produce a more complete and balanced understanding of migration. Examination of net migration balances has been extended to study the spatial pattern of migration by Principal Components Analysis of gross flows at a national level. The analysis of the migration environment by means of correlation and multiple regression has complemented the study of spatial patterns of movement, and in particular this has involved analysis of the areas of origin and the areas of destination, in terms of their agricultural, demographic and socio-economic characteristics, and their changes over time, at both the national level and the local level within the department of Isère. The study of the environmental context of migration has been supplemented by a study of the characteristics of the migrants themselves drawn from a sample of migrants to Grenoble.

At the national level the net patterns of migration have been elucidated by examination of matrices of gross flows at cross-sections in time, from 1891 to 1968. This study provides a more comprehensive view of migration systems than the study of net flows, which gives only the

balance of in- and out-migration in any particular area. The study of gross flows links origins and destinations, highlights the changing hinterlands of major cities over time, and reveals the complexity of movement whereby one department may serve as a local destination but also as a source of migrants for other destinations.

The study of gross migration flows emphasised the importance of Paris as a major destination from 1891 to the present day. The hinterland of Paris has, however, contracted from almost the whole of France to draw chiefly on those parts of Western France which have no major local centre to act as an 'intervening opportunity'. In the 1960s there is also evidence of migration away from Paris, as the population leaves overcrowded and run-down areas of the central city, and as industry and population is decentralised to the wider Paris basin. Furthermore there is evidence of other return migrations to areas of origin, often as retirement migration particularly to Provence-Côte d'Azur.

In the period before the Second World War other important migration flows were to the major provincial cities of Lyon, Marseille and Bordeaux, drawing on regional hinterlands. At a more local level migration flows occurred between contiguous departments forming complex interconnected systems of movement. In the post-war years this comparatively simple system of rural-

urban migration and hierarchical flows was replaced by different types of migration. As inter-urban moves became more important so the rapidly growing urban destinations of the Eastern corridor of France became of greater national importance, while movement away from the declining industrial areas of the North and North-East combined with flows of metropolitan decentralisation and retirement migration, to form an increasingly complex pattern of spatial flows.

This study of the spatial flows of migration, while not examining specifically the contribution of distance, showed that people now move greater distances than formerly, and it also showed the importance of distance in restricting the hinterlands of regional centres. However, it was felt that distance per se cannot offer an adequate explanation for migration, and for this reason a further study of the environment of migration was undertaken. The factors considered to be of particular importance and the aspects thus measured were population, agriculture and amenities. Population and natural growth may be considered as the variables which best describe the initial situation before migration (in as much as migration may ever be considered as a closed system); agricultural potential defines the population optimum in terms of use of natural resources, in relatively self-contained communities; while socio-economic factors illustrate the

'quality of life' which has become a factor of increasing importance in the years since the Second World War.

The relationship between outmigration and natural growth of population is a complex one. Areas of population pressure - high rates of natural growth coupled with limited natural resources - were delimited, and in later years areas that had suffered massive outmigration were left as relict areas with an ageing population and low rates of natural growth, as evidenced particularly by the Southern Massif and Lorraine. However the areas of greatest population growth (Brittany and the Massif Central) did not necessarily exhibit greatest loss of population, but were able to provide increased employment opportunities by the improvement and extension of domestic agriculture.

In particular the Limousin, part of Picardy and the Breton departments lagged behind the Paris basin in adopting improvements and extensions, and in so doing during the period 1891-1931 were able to stem their out-migration to a certain extent. Most emigration at the time occurred from the areas of livestock rearing and polyculture, whose natural resources were extremely limited, and whose excess population was forced to find alternative employment elsewhere.

Post-war the agricultural structure of different areas became of less importance, as agricultural employment

occupied fewer people, and as migrations became more complex. The environment of migration also changed; in the pre-1939 era the majority of migratory movements were from depressed rural areas to urban areas of promise but poor conditions, as measured by housing amenities and measures of general health, such as infant mortality. By the post-war period, however, migration was occurring to areas of better amenities in terms of housing, education and health (the su burbs, Provence-Côte d'Azur, tourist areas) whereas the areas of out-migration were of relatively poor environmental quality, areas such as the city centres, the remotest of the rural areas, the declining industrial departments. The most important factor in migration flows in this recent period (since 1946) is undoubtedly the level of amenities available in the reception area. This is true whether at the national level or at the local level, within Isère and the city of Grenoble.

The department of Isère was selected for further study because of the presence within it of the rapidly growing city of Grenoble which emerged in the post-war period as a focus for migrants of national importance. Furthermore, the diversity of the natural environment within Isère provided a variety of areas of differential attraction to migrants. The study of the migration environments within the department (the origins) and in

the city (the destinations) was supplemented by a study of 1970 residents of Grenoble, drawn from the 1968 census returns.

Within Isère the role of distance in our 'explanation' of migration again appeaxs secondary. The communes showing greatest growth by inmigration have undoubtedly been those nearest to the major cities of Grenoble and Vienne, while more distant suburban communes and larger cantonal capitals and market towns have maintained steady but unspectacular growth. The effect of distance is best shown by the 'empty band' of communes across the central Bas-Dauphiné from which migrants are drawn both North to Lyon and South to Grenoble.

However, the effects of distance are of less relevance than other factors in explaining the rates of loss from the communes of Isère. The factors of particular importance are traditional geographic factors of altitude, of the Alpine environment which is not conducive to agriculture, and the declining industries in the Alpine valleys. Also the cumulative effect of recent population history is important in accounting for outmigration: the Alpine areas are the traditional labour reserves for Grenoble and by the 1960s suffered from an aged and unbalanced demographic structure, and so are unable to suffer from further continued population loss.

Linked to the tradition of outmigration is the

concept of a minimum population and a threshold level of services. Almost all the rural communes have suffered population loss while the larger towns with alternative employment opportunities other than in agriculture, and a minimum level of services have been much more successful in maintaining and even increasing their total population. Communes with a population under 200 in 1891 have declined dramatically with the worst affected areas losing population at the rate of 5% per annum in the 1960s.

The rural communes which have retained population best are those with more intensive agriculture. In the Alps those areas which can grow cereals have suffered less than those relying on transhumance; in the lowlands the more intensive areas of market gardening have retained their population more successfully than communes where only polyculture is possible.

Furthermore, the level of amenity again emerges as a factor in the migration environment. Outmigration is particularly marked from the small communes with a low level of population and services; when this is combined with overcrowding, and a lack of modern facilities such as baths and indoor lavatories, outmigration is indeed severe. This is particularly noticeable when the disparity in levels of amenity is great between contiguous urban and rural communes.

The different environments within Isère produce different types of migrant, with different ambitions, who seek out different areas of the city. The migrants from Isère and from other parts of France to Grenoble may be divided into two main categories. The migrants from the Alpine communes in Isère and from smaller rural communes in the rest of France represent the remnants of the traditional rural-urban migration so characteristic of pre-war France. This is an older migration of lesser qualified people, moving to the employment opportunities offered in a large rapidly growing city. On the other hand the migrants from the Grenoble agglomeration and from other large cities of France have moved more recently, and consist of highly skilled workers, scientists and students, and whose migration is likely to be only one step of many in their life cycle and career development. These migrants are to be found in the newest and smartest suburbs of the city.

This group of inter-urban migrants is in complete contrast to the foreign-born migrants, who again form two major groups. One group consists of Italians, Poles, Spaniards and other Southern Europeans who form a 'replacement labour' group composed chiefly of workmen and labourers, and are to be found severely segregated in the old centre of the city. The other major group consists of North Africans, the majority of whom moved

to Grenoble in the 1960s, who are much more middle-class in their occupational characteristics, and much more widespread in their location within the city. The other minority group comes from many diverse countries and corresponds to the inter-urban group, in that they consist of highly-qualified scientists, administrators and students attracted to Grenoble's research and technical institutes.

Throughout this study the use of statistical techniques has been subordinated to the data available and to the aim of providing a more complete understanding of migration, and has not been seen as an end in itself. Use has been made of simple but relatively under-utilised techniques when appropriate, particularly such simple measures as percentage difference, contingency tables, migration velocities and Mann-Whitney 'U' tests. The well-established technique of Principal Components Analysis has been used in the novel context of matrices of gross migration flows to extract the major similarities between flows at different periods in time. The comparatively new (to geography) technique of Automatic Interaction Detection has been used to determine the factors important in explaining migration to areas of migration loss and gain within Isère, and has enabled a classification of those areas to be drawn up on the basis of the most important factors.

Above all, this thesis has tried to overcome the danger inherent in geography today, which is still fascinated by newly acquired statistical techniques, of subordinating the subject matter of the discipline to the attractions of statistical experimentation. Clearly in the field of migration research the data available holds a rich store of information ripe for exploitation. Nowhere is this more true than in France where the quality of the data is excellent. It was considered that the best way to exploit this plethora of data was to attempt a comprehensive view of the subject matter both in time and space, and to try and consider simultaneously three fundamental aspects of the subject. Thus as well as examining aspects of the migration flows themselves, particular attention has been paid to rural and urban perspectives on the environmental context of migration, as well as to the characteristics of the migrants themselves related to their source and destination areas. The advantage of adopting this broader and more traditional geographical perspective is that one is rewarded with a more comprehensive and complete understanding of the migration process, and in particular the adoption of a long time-perspective allows the study of present-day migration patterns and processes to be viewed as part of the evolving geography of France. Moreoever it is to be hoped that the approach adopted illustrates the rewards to be reaped from the combination of the newer and the more traditional geographical approaches in a distinctive and beneficial manner.

A P P E N D I X 1

CORRELATION MATRICES

MIGRATION AND SOCIO-ECONOMIC VARIABLES 1891 - 1970

1891 Correlation matrix: migration and socio-economic variables

	Net migration	Population density	Rural population	Population aged 0-20	Population aged over 65 yrs.	% population male	Natural growth	Infant mortality	Persons per house	Unemployment	Women employed	Agricultural employment	Industrial employment	Tertiary employment
Net migration		+	−	−*	−		−*	+	−	+*		−	+	+
Population density			−					+*	−*	+	+*	−*	−	+
Rural population				+*	+*			−	+	−*		+	−	−
Population aged 0-20					−		+		+		+*	+*		−*
Population aged over 65 years							−		−		−*	+*		
% population male											−			
Natural growth								−	+					
Infant mortality									−*	−*		−	+	+
Persons per house												+	−	
Unemployment														+*
Women employed														
Agricultural empt.													−	−
Industrial empt.														+*
Tertiary empt.														

\- negative correlation + positive correlation

−+ indicates a correlation significant at 0.01% level

−* +* indicates a correlation significant at 0.05% level

1929 Correlation m atrix: migration and socio-economic variables

	Net migration	Population density	Rural population	Population aged 0 - 20 years	Population aged over 65 years	% population male	Natural growth	Infant mortality	Deaths caused by tuberculosis	Deaths caused by cancer	Deaths caused by Bronchitis/Pneumonia	Deaths caused by Violence	Deaths caused by Suicide	Persons per house	Unemployment	Women employed	Agricultural employment	Industrial employment	Tertiary employment
Net migration	·	·	-	-	-	+	-*	·	·	·	·	+	·	·	+	·	-	+	+
Population density			-	-	-*	-*			+	+*				-	+		-	+*	+
Rural population					+	-*			-	-		-		+*	-		+	-	-
Population aged 0-20					-		+	+*	+					+					
Population aged over 65 years							-	-	-	-		-		-*	-		+	-	-
% population male												+	+*				-	+	+*
Natural growth									+	+		+					-	+	
Infant mortality											+				+*		-*	+*	
Deaths caused by tuberculosis										+		+*			+		-	+	+
" Cancer												+	+	-	+		-	+	+
Bronchitis/ Pneumonia												+*	-	+					
Violence															+		-	+	+
Suicide														-	+		-	+	+
Persons per house															-		+	-	-
Unemployment																	-	+	+
Women employed																			
Agricult. employment																		-	-
Industrial employment																			+
Tertiary Employment																			

\- negative correlation + positive correlation

+ ↓ indicates a correlation significant at 0.01% level

-* +* indicates a correlation significant at 0.05% level

1955 Correlation matrix: migration and socio-economic variables

	Net migration	Population density	Rural population	Population aged 0 - 20	Pop'n aged over 65	% population male	Natural growth	Infant mortality	Deaths caused by tuberculosis	" Cancer	" Bronchitis/ Pneumonia	" Violence	" Suicide	Persons educated above primary level	Persons per house	% houses with bath	% houses with W.C.	% houses owned	Unemployment	Women employed	Agricultural employment	Industrial employt.	Tertiary employment
Net migration			-		-		+	..	+	+		+	+*	+		+	+	-	+		-	+	+
Population density			-	-*						+*				+	-	+*	+*	-	+		-		+
Rural population				+*	+				-	-		-		-	+	-	-	+	-		+	-	-
Pop'n aged 0-20					-		+	+	+		+*	+	+	-	+	-*	-		-				-*
Pop'n aged over 65							-	-*	-	-	-	-			-*	-	-*	+			+	-	-*
% pop'n male											-												
Natural growth								+	+	+	+	+	+		+*			-			-	+	
Infant mortality										-*	+*			-	+	-	-			-*			-
Deaths caused by tuberculosis										+		+				+*		-		+	-	+	
" Cancer											+*	+	+		-			-		+	-	+	+*
" Bronchitis/ Pneumonia												+*		-*							-*	+	-*
" Violence													+			+	+	-			-	+	+
" Suicide															-		-*	-*		+			
Persons educ.above primary level															-*	+	+	-	+		-	+*	+
Persons per house																		+	-		+		-
% houses with bath																	+	-	+		-	+	+
% houses with W.C.																		-	+	-*	-	+	+
% houses owned																			-		+	-	-
Unemployment																				-	-	+	+
Women employed																					+*		-*
Agricultural employment																						-	-
Industrial employment																							+
Tertiary employment																							

\- negative correlation + positive correlation

\- + indicates a correlation significant at 0.01% level

-* +* indicates a correlation significant at 0.05% level

1970 Correlation matrix: migration and socio-economic variables

	Net migration	Population density	Rural population	Pop'n aged 0–20	Population aged over 65 years	% population male	Natural growth	Infant mortality	Deaths caused by tuberculosis	" Cancer	" Bronchitis/ Pneumonia	" Violence	" Suicide	Persons educ. above primary level	Persons per house	% houses with bath	% houses with W.C.	% houses owned	Unemployment	Women employed	Agricultural employment	Industrial employment	Tertiary employment
Net migration			−					−						+		+	+		+		−		
Pop'n density			−	−		−				+				+	−	+*		−	+*	+	−		
Rural pop'n					+		−	+		−				−		−	−	+	−		+	−	
Pop'n aged 0–20					−	+	+					+	+		+							+	
Population aged over 65 years						−	−	+*	−	−		−	−	−	−	−	−	+		−*	+	−	
% pop'n male							+							+*	+					−		+	
Natural growth								−	+*	+		+*	+	+	+	+	+	−		+*	−	+	
Infant mortality										−				−		−	−*	+		−	+		
Deaths caused by tuberculosis										+*			+*					−*		+*			
" Cancer													+*	+				−	+*	+	−	+	
" Bronchitis/ Pneumonia																							
" Violence																						+*	
" Suicide																−*	−			+			
Persons educated above primary level															−*	+	+	−		+	−	+	
Persons per house																		+*	−*				
% houses with bath																	+	−	+		−	+	
% houses with W.C.																		−	+	−*	−	+	
% houses owned																			−	−	+	−	
Unemployment																					−		
Women employed																							
Agricultural employment																							
Industrial employment																							
Tertiary employment																							

\- negative correlation + positive correlation

\- + indicates a correlation significant at 0.01% level

−* +* indicates a correlation significant at 0.05% level

A P P E N D I X 2

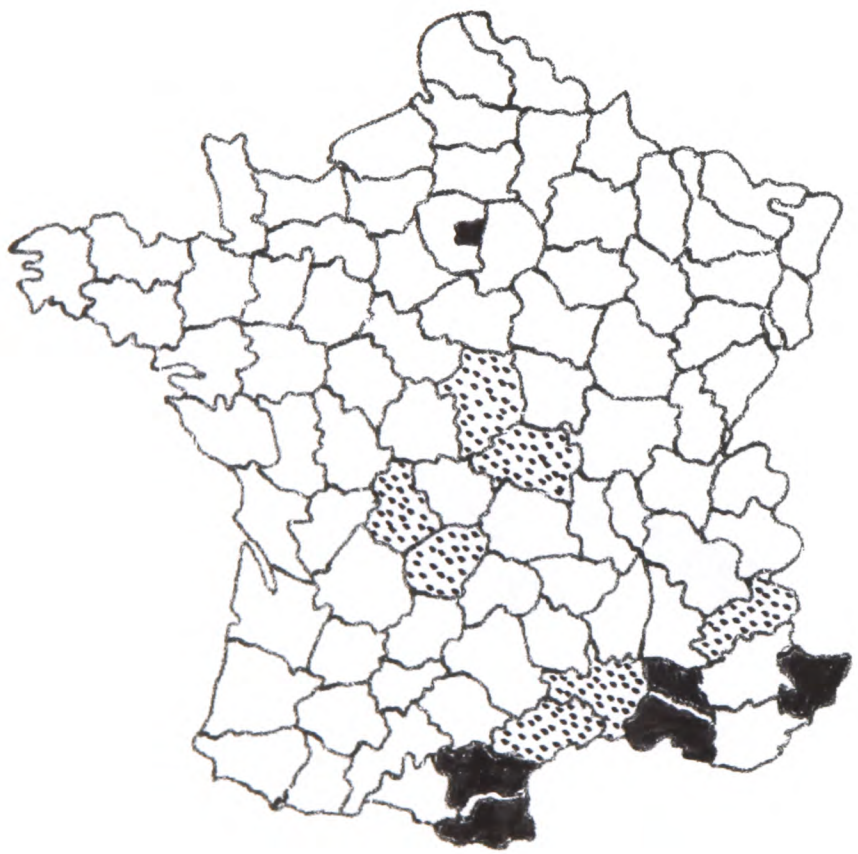
AGRICULTURAL IMPROVEMENTS AND MACHINERY

1892 - 1970

IMPROVEMENTS

1. Irrigation of arable land

a. **1892**

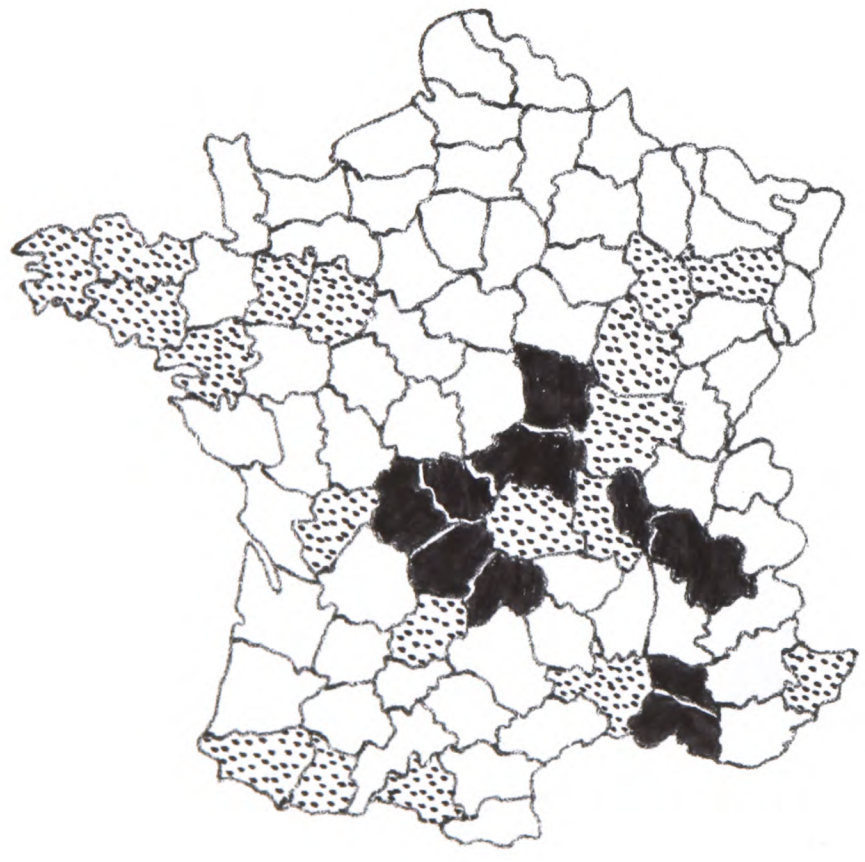


b. **1929**

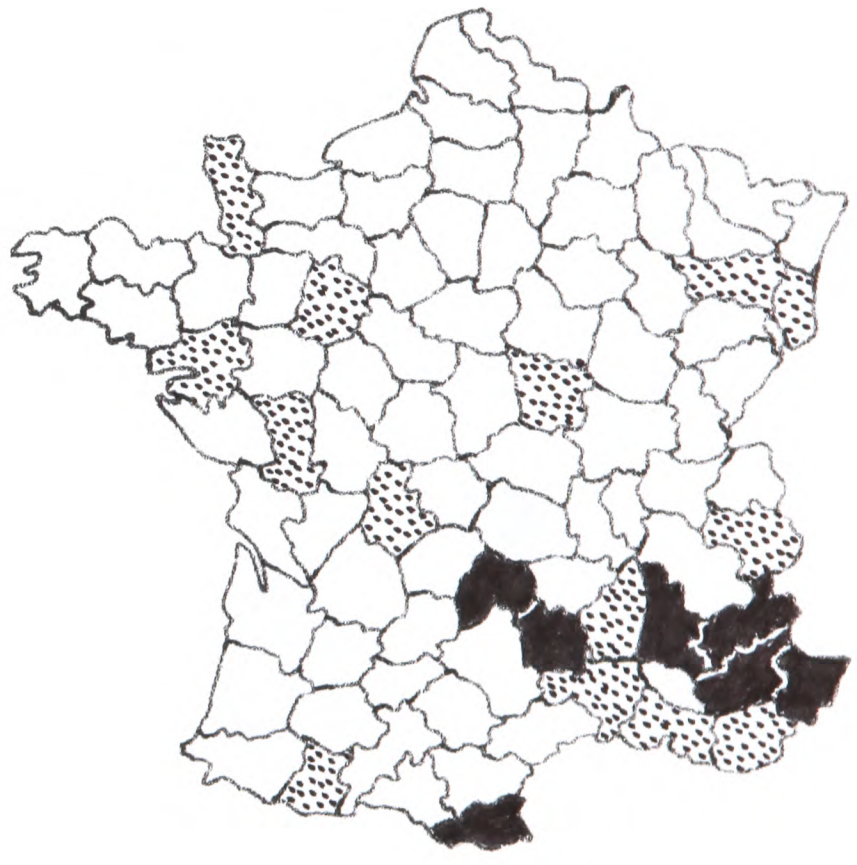


2. Irrigation of pasture

a. **1892**

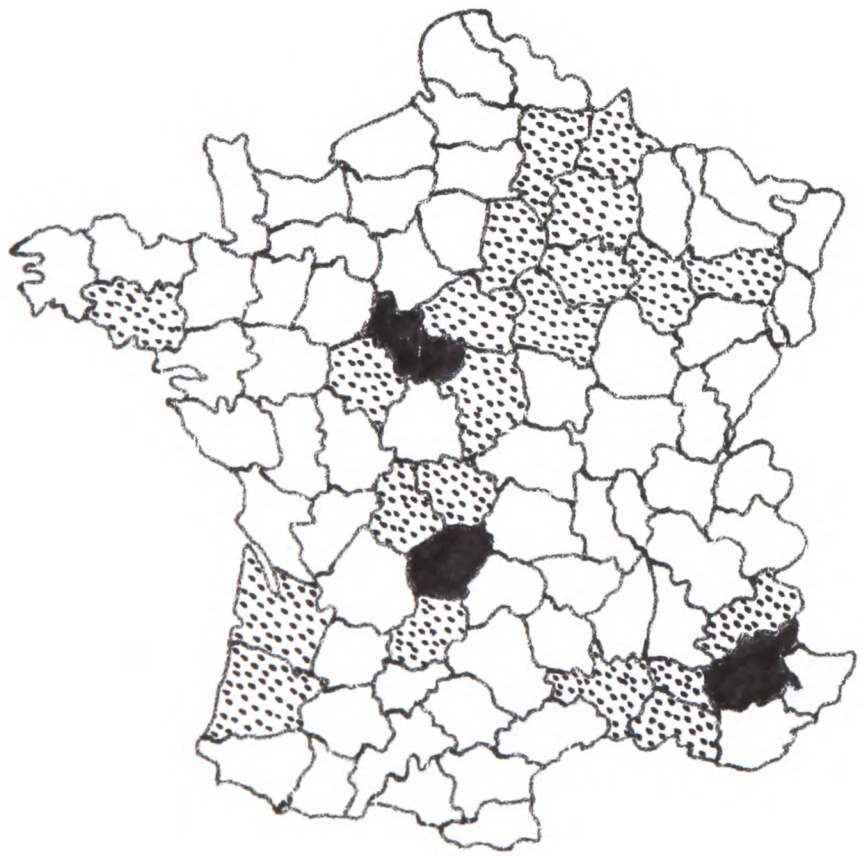


b. **1929**

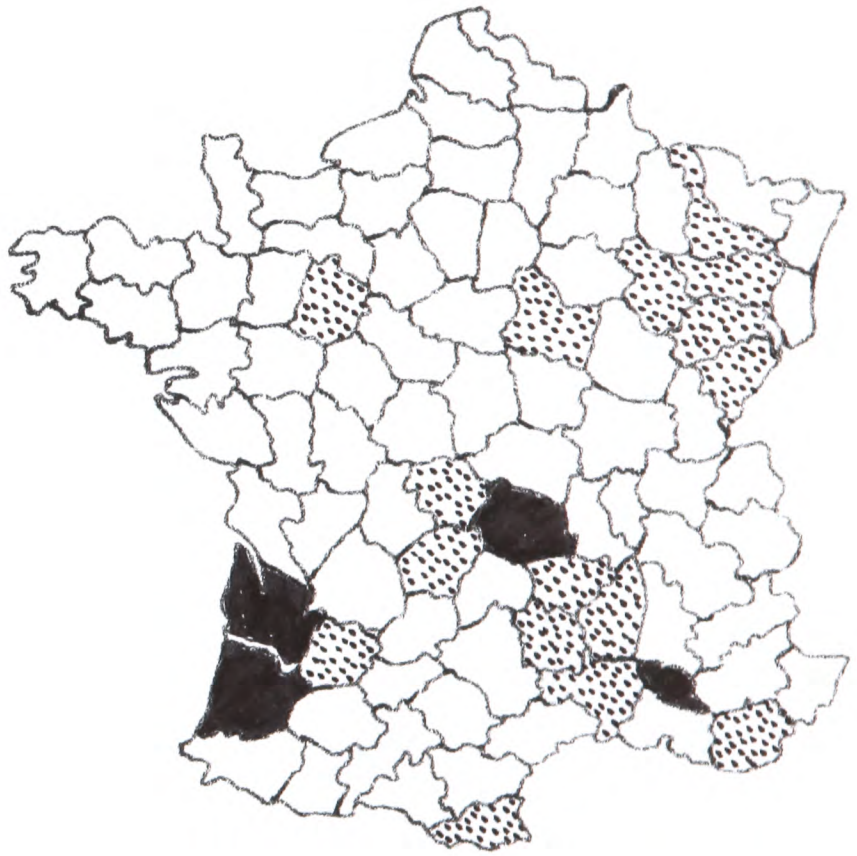


3. Reafforestation

a. **1892**

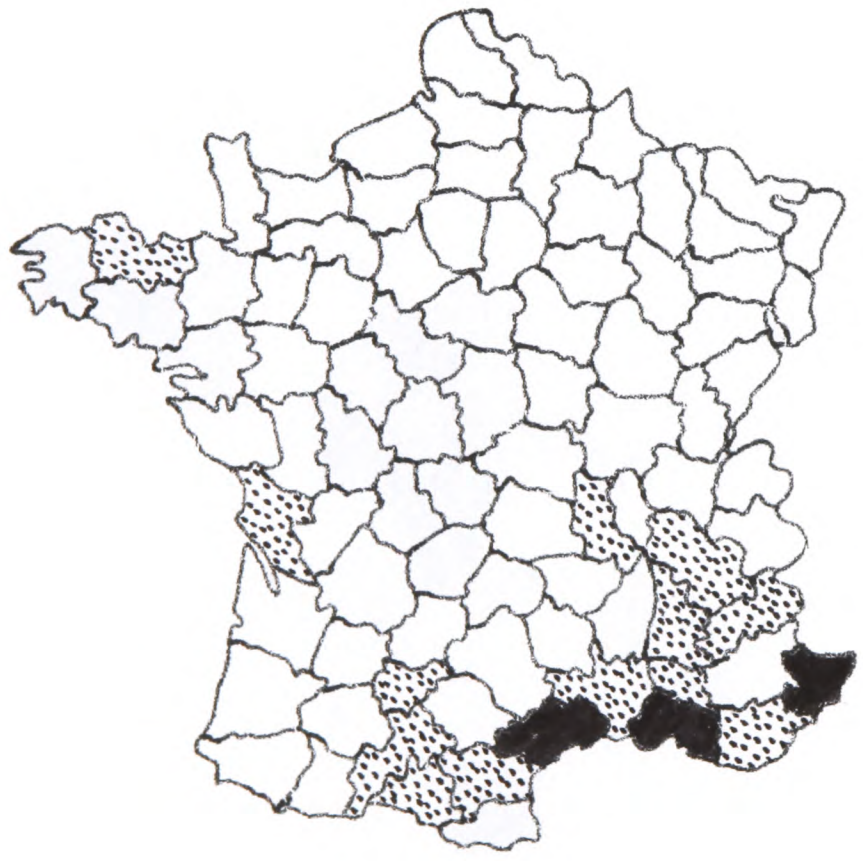


b. **1929**

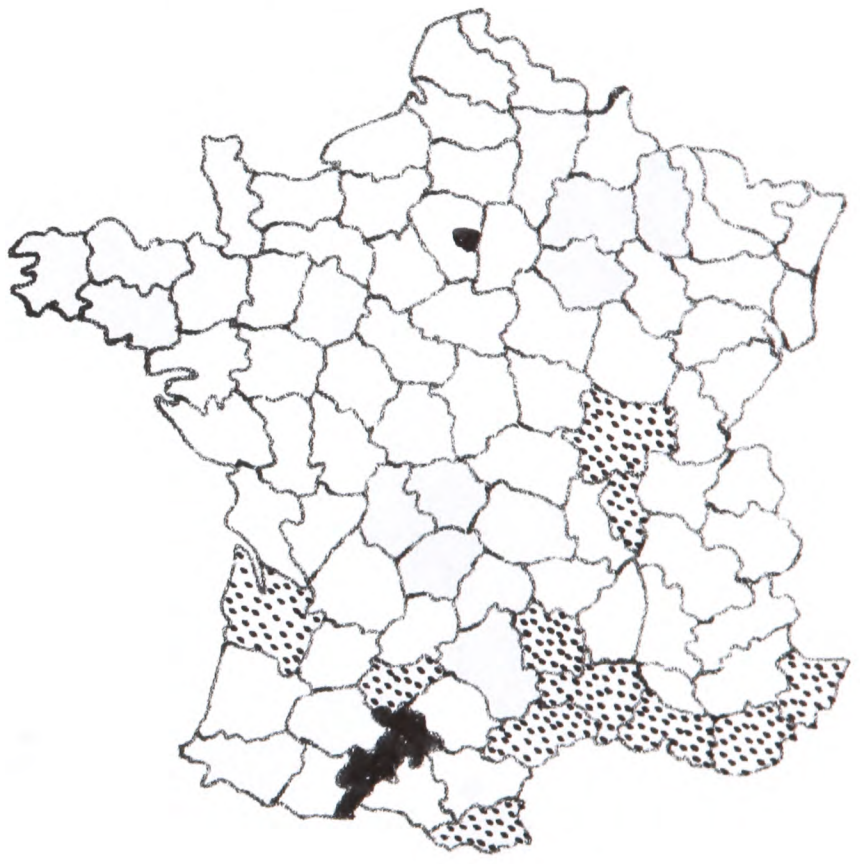


4. "Arrossage"

a. **1892**

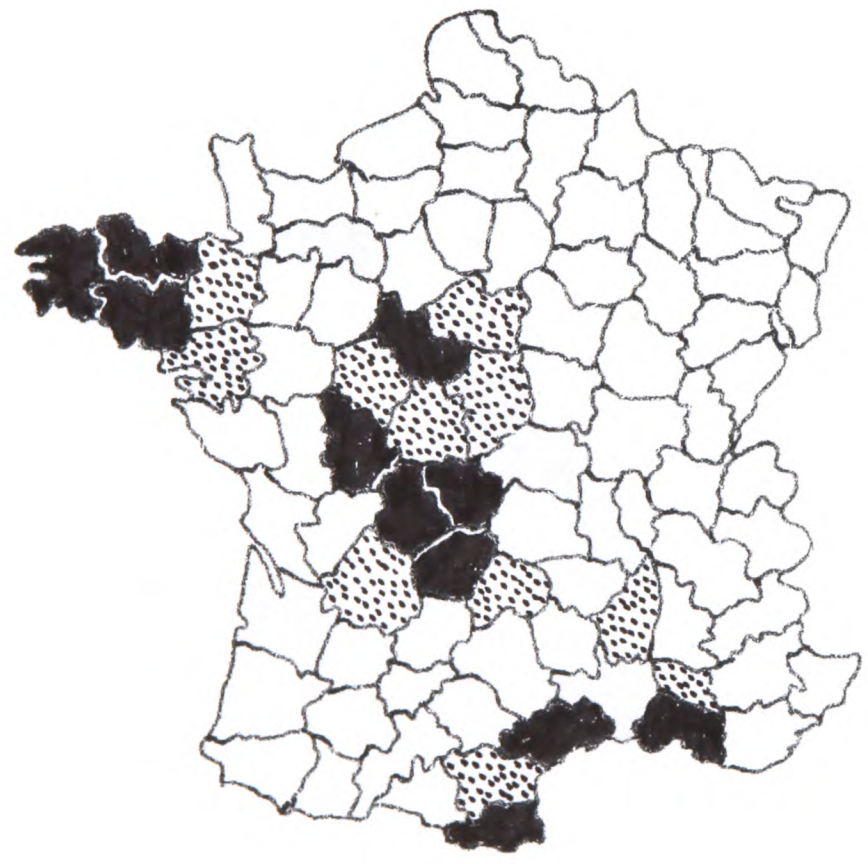


b. **1929**

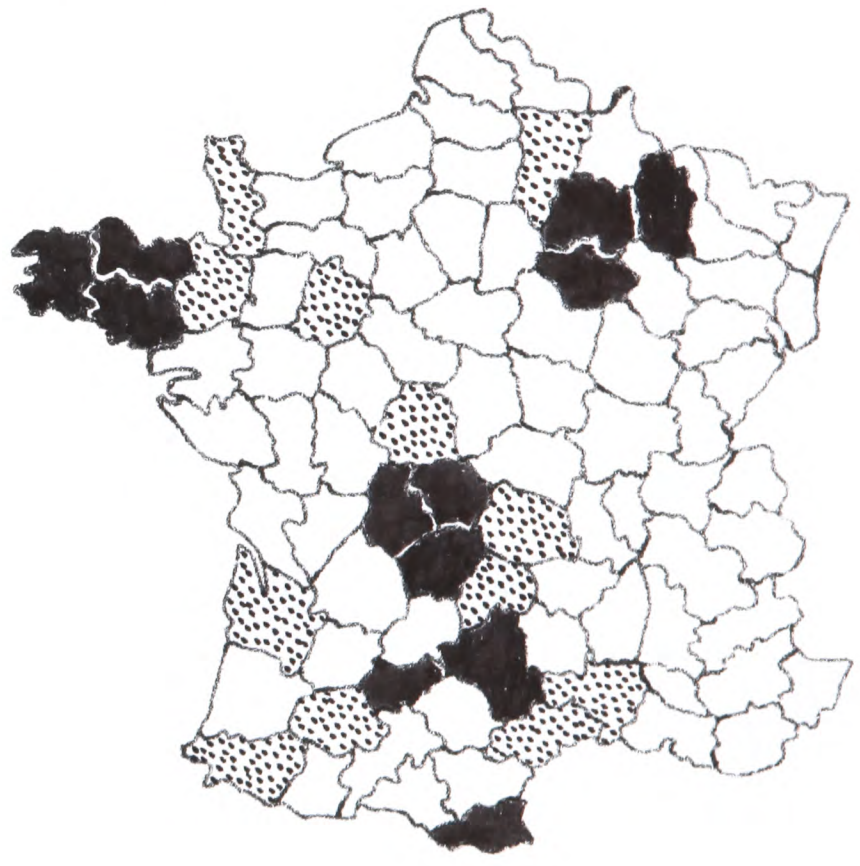


5. Land clearance

a. **1892**

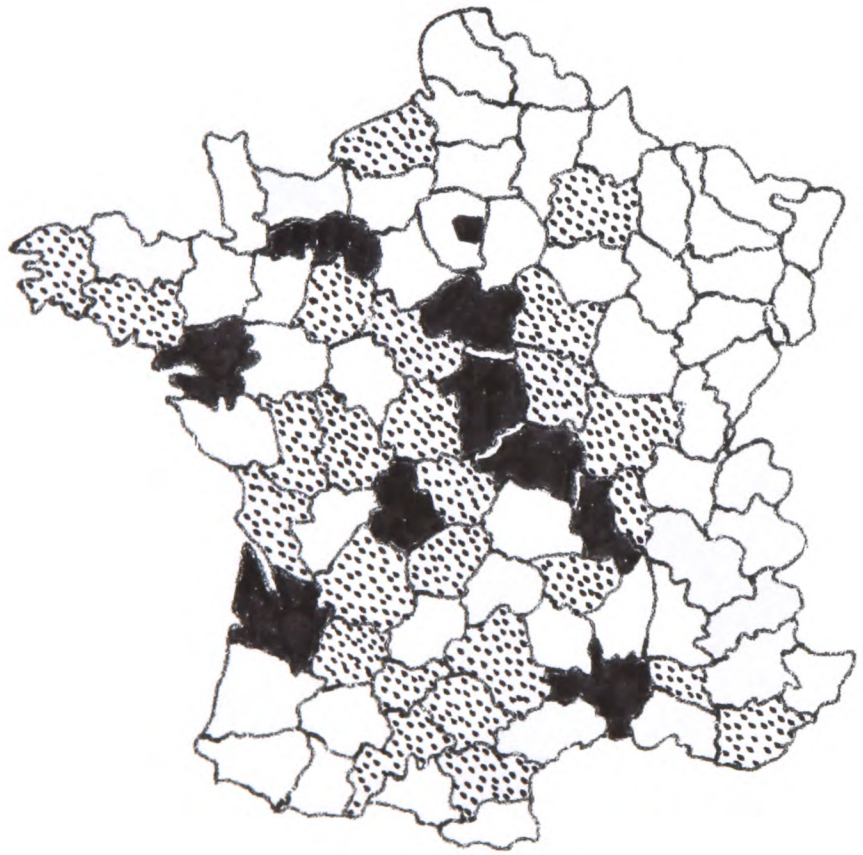


b. **1929**

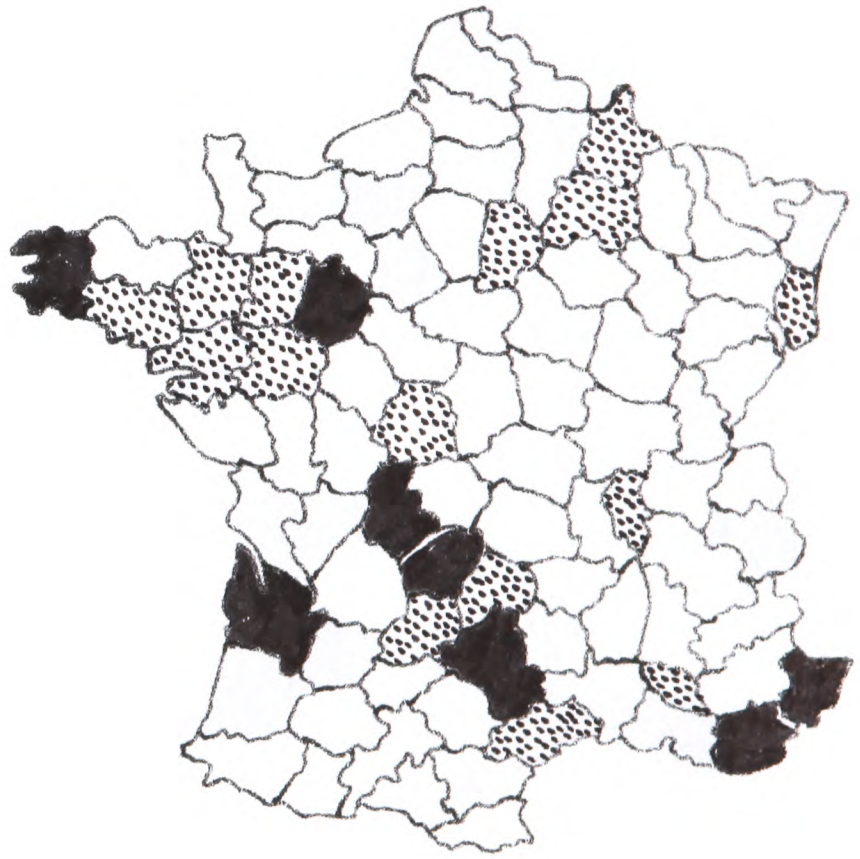


6. Clearance of woods

a. **1892**

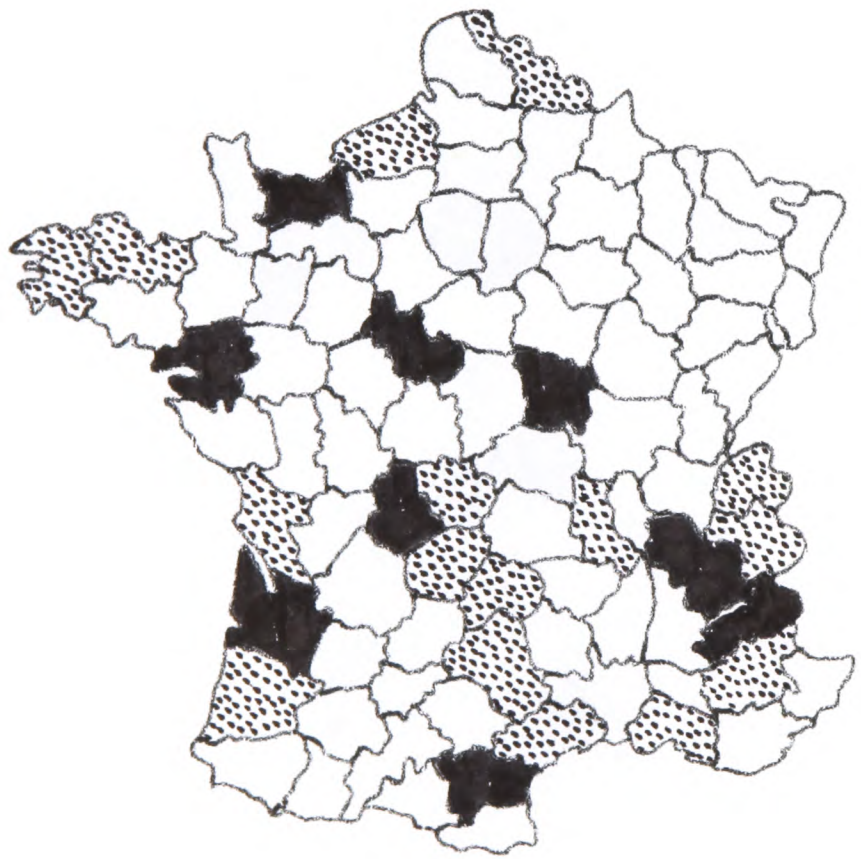


b. **1929**

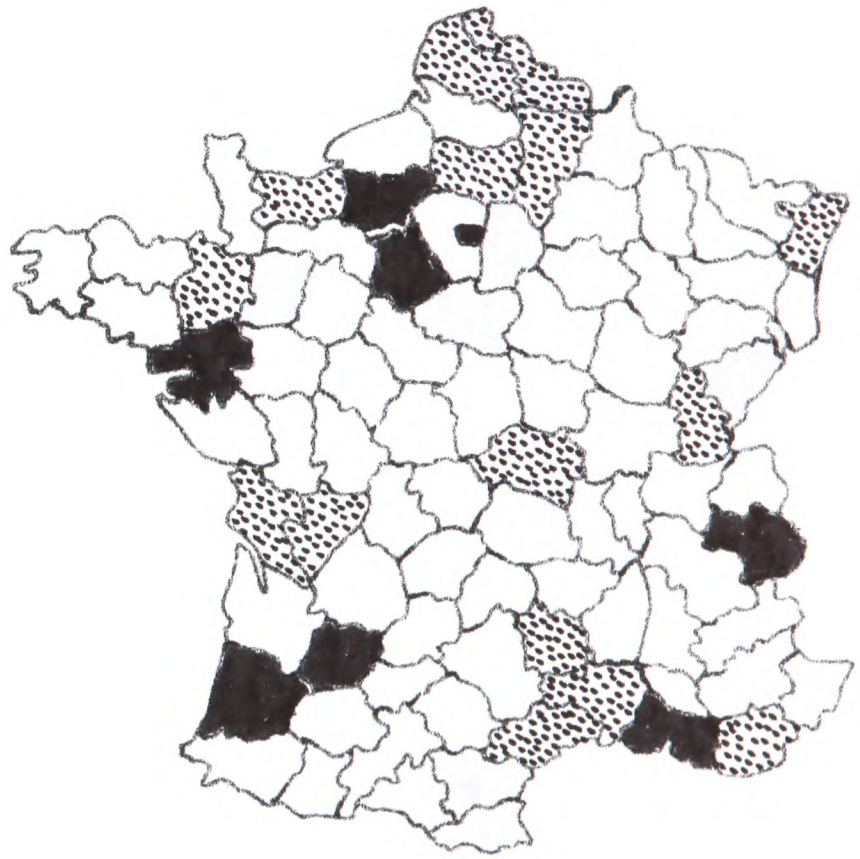


7. Clearance of marshes

a. **1892**

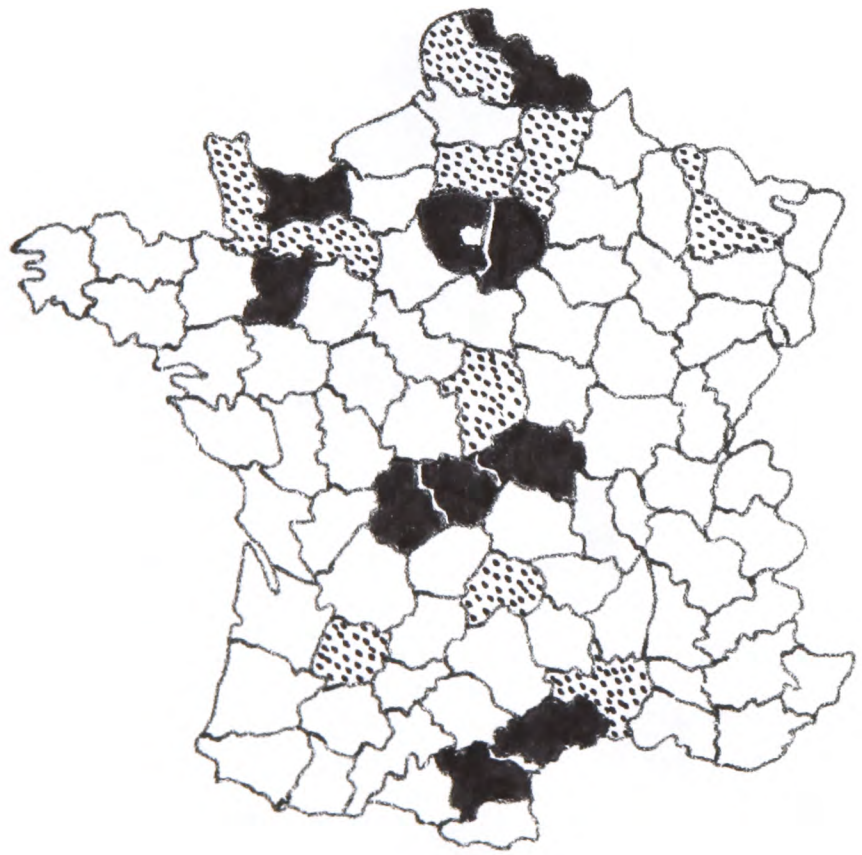


b. **1929**

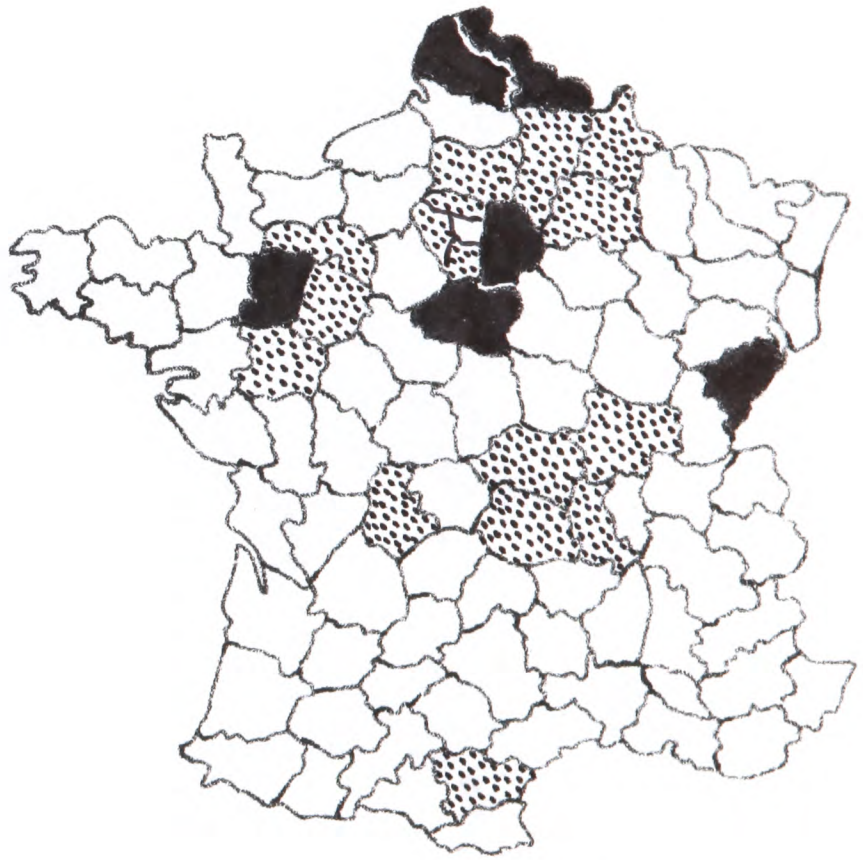


8. Drainage

a. **1892**

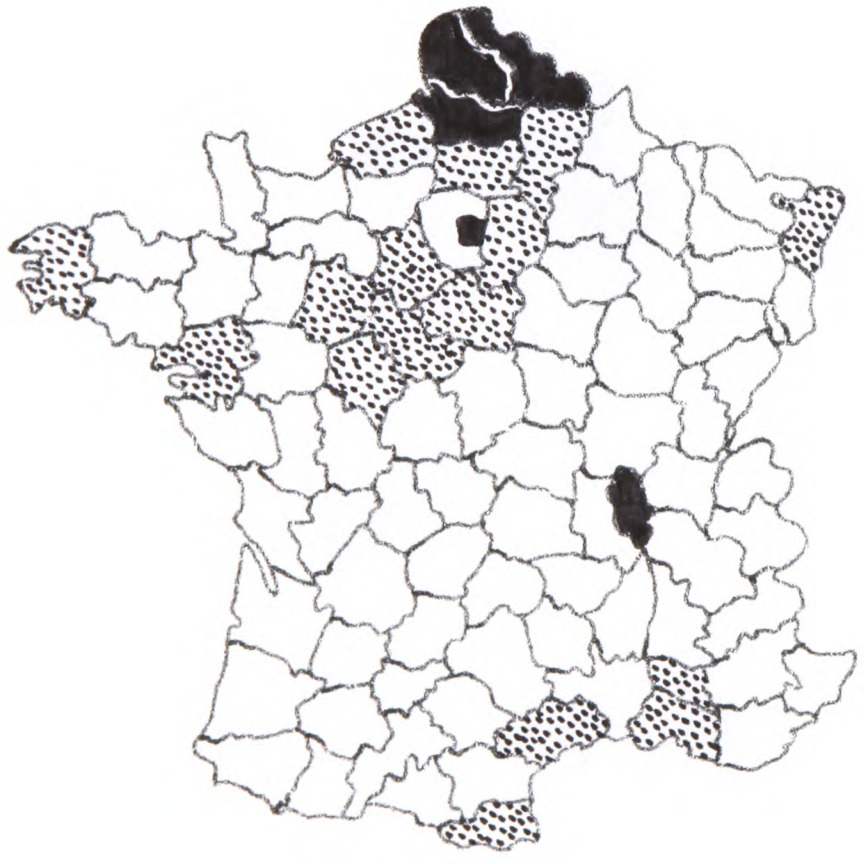


b. **1929**

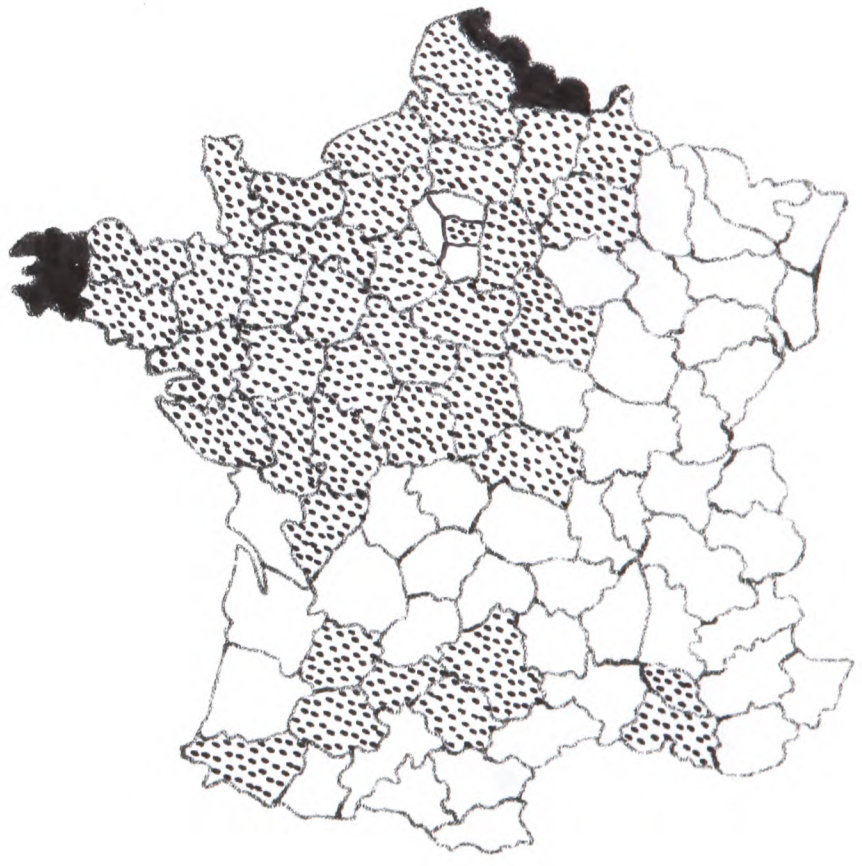


9. Fertiliser **1929**

a. Nitrogenous

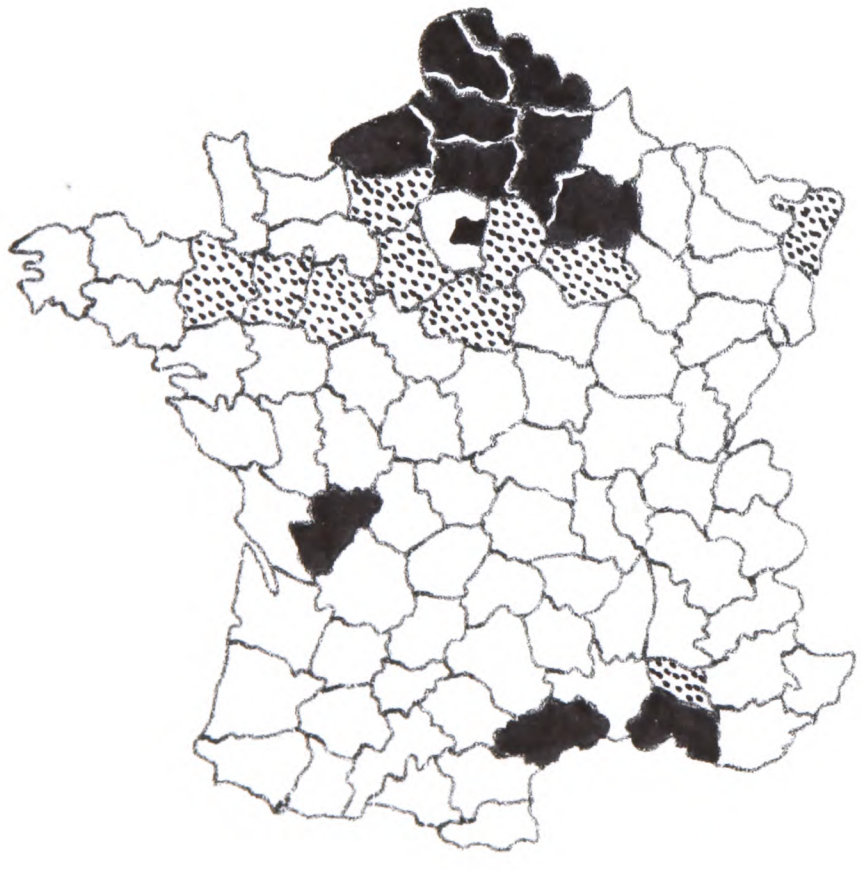


b. Phosphates

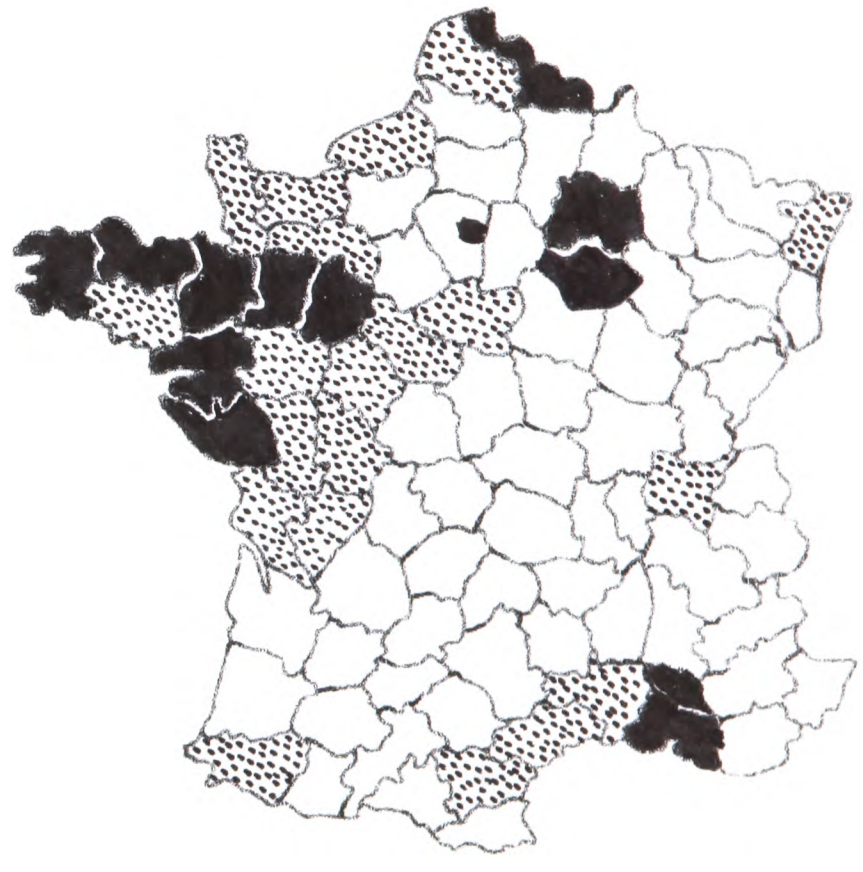


10. Potash fertiliser

a. **1929**

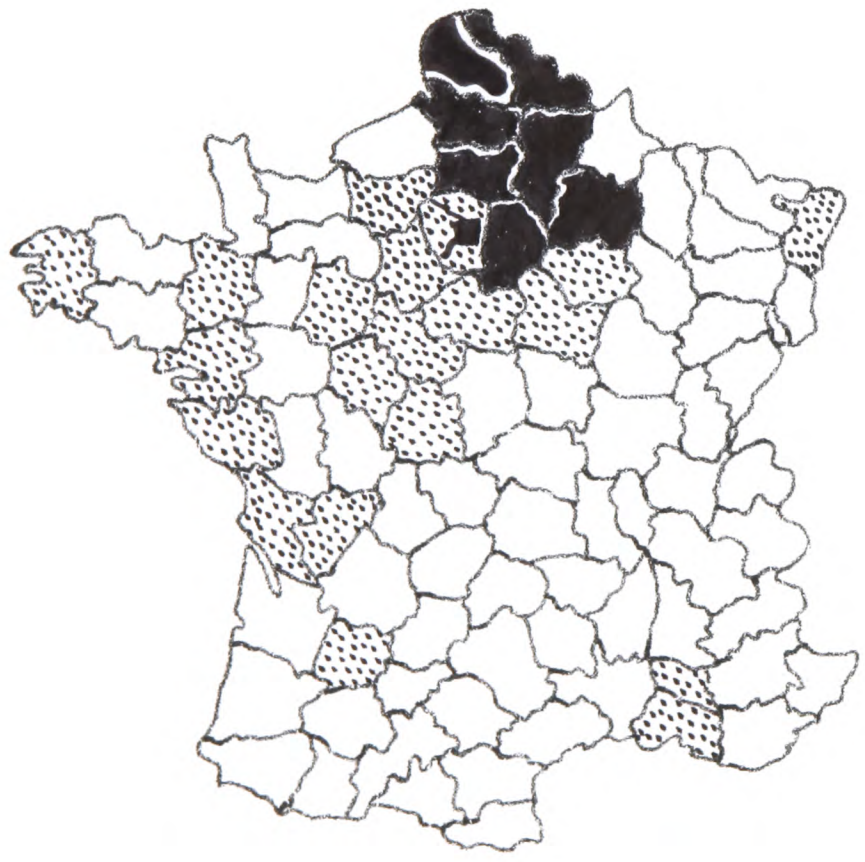


b. **1955**

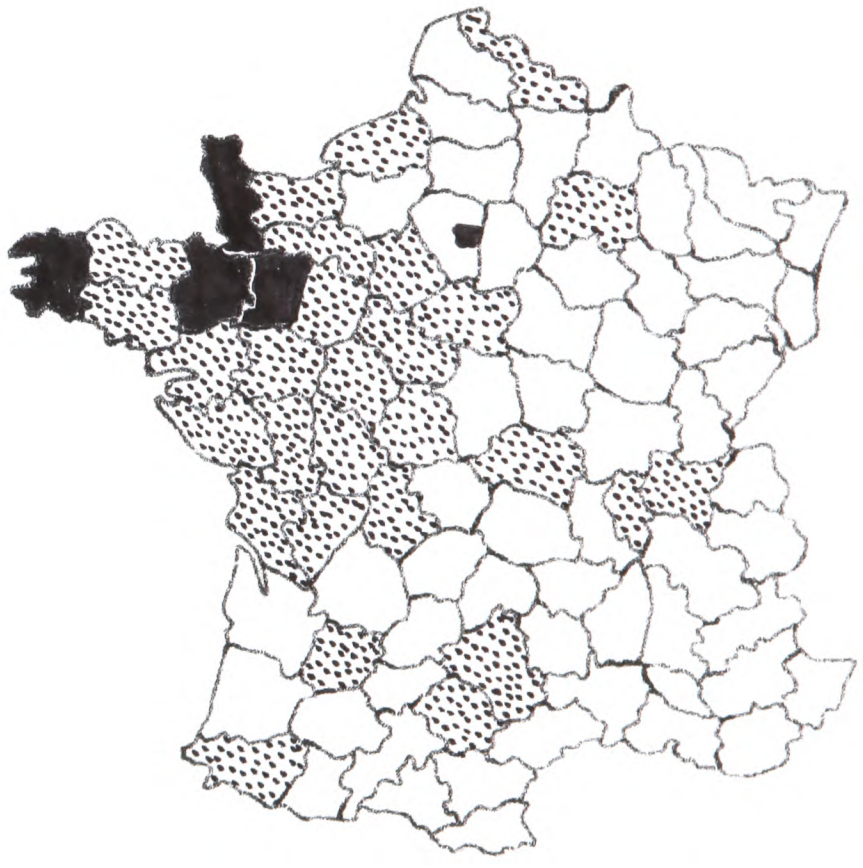


11. Fertiliser **1955**

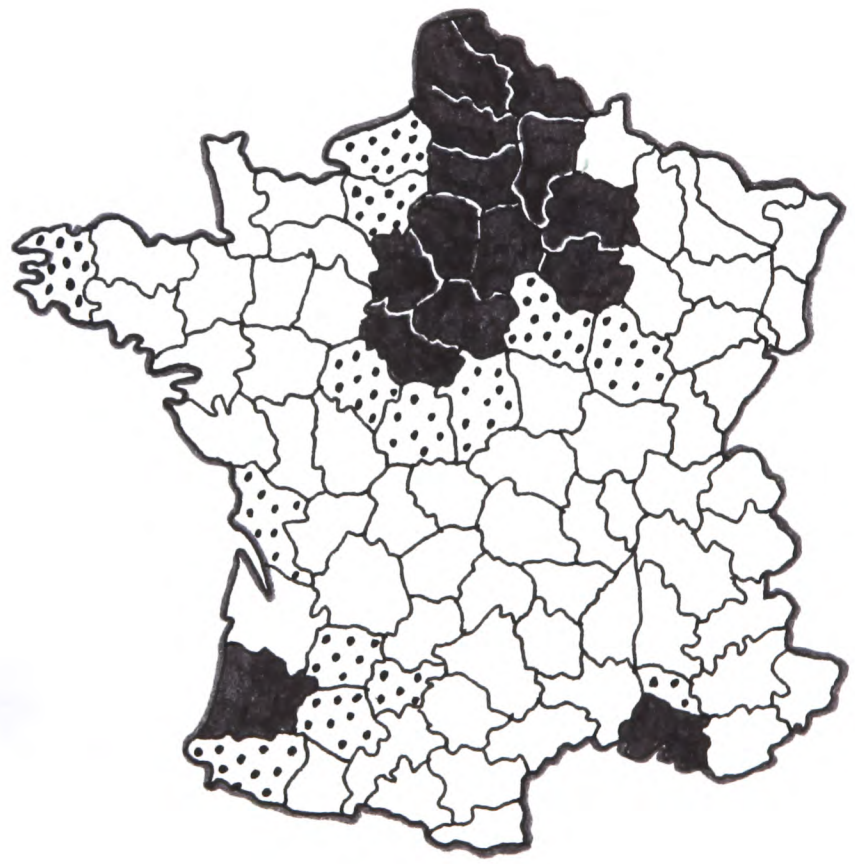
a. Nitrates



b. Phosphates

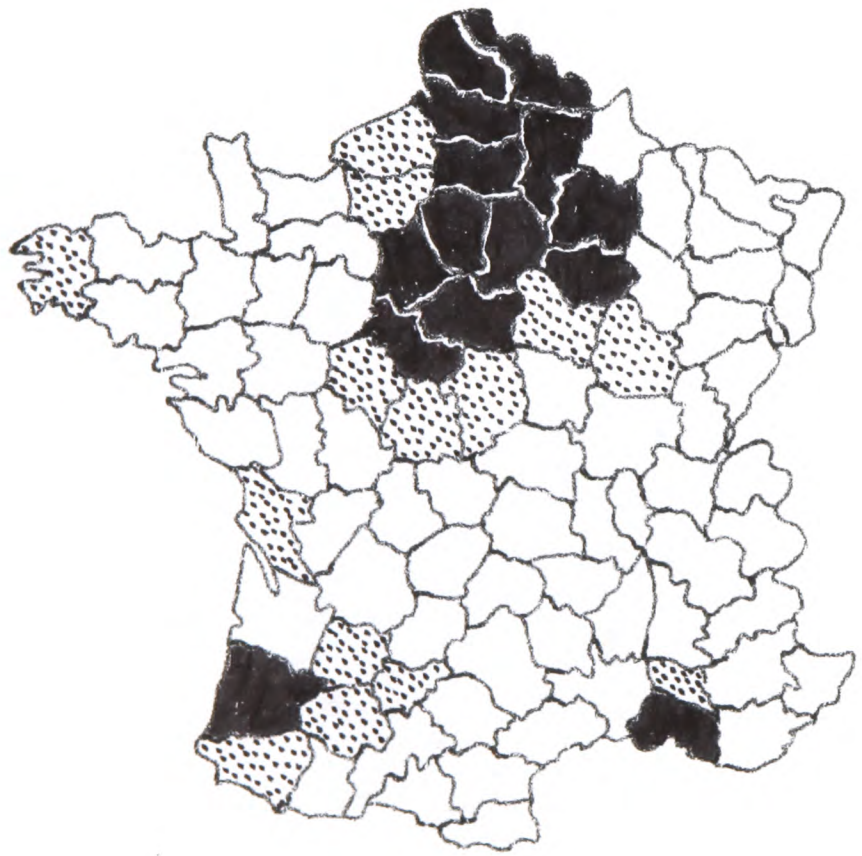


12. Nitrate fertiliser **1970**

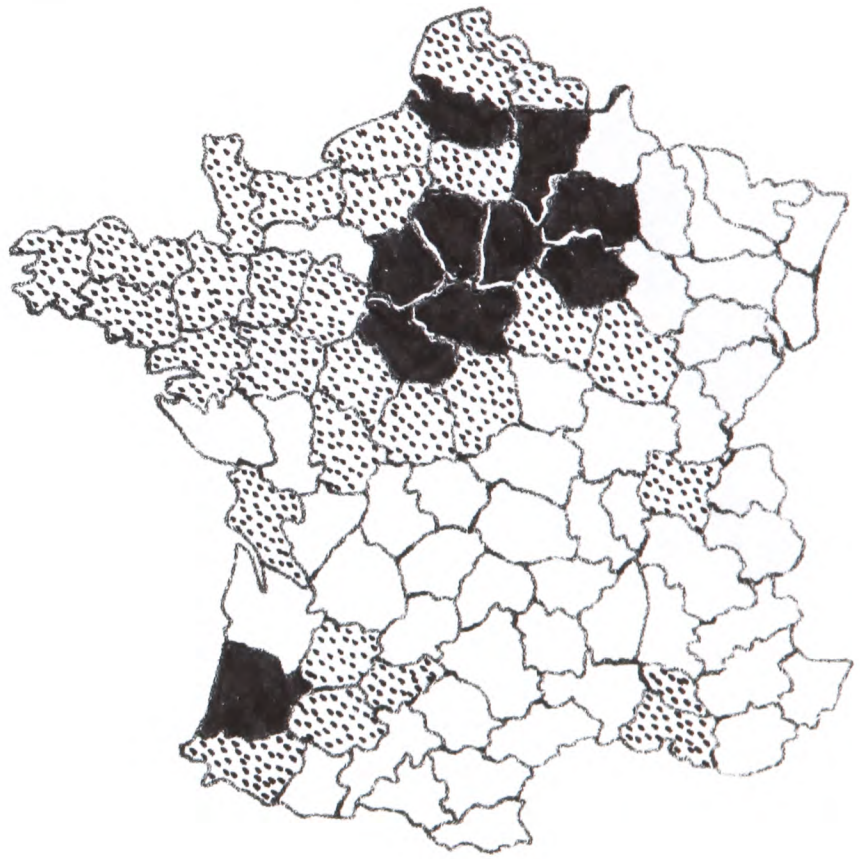


13. Fertiliser **1970**

a. Potash

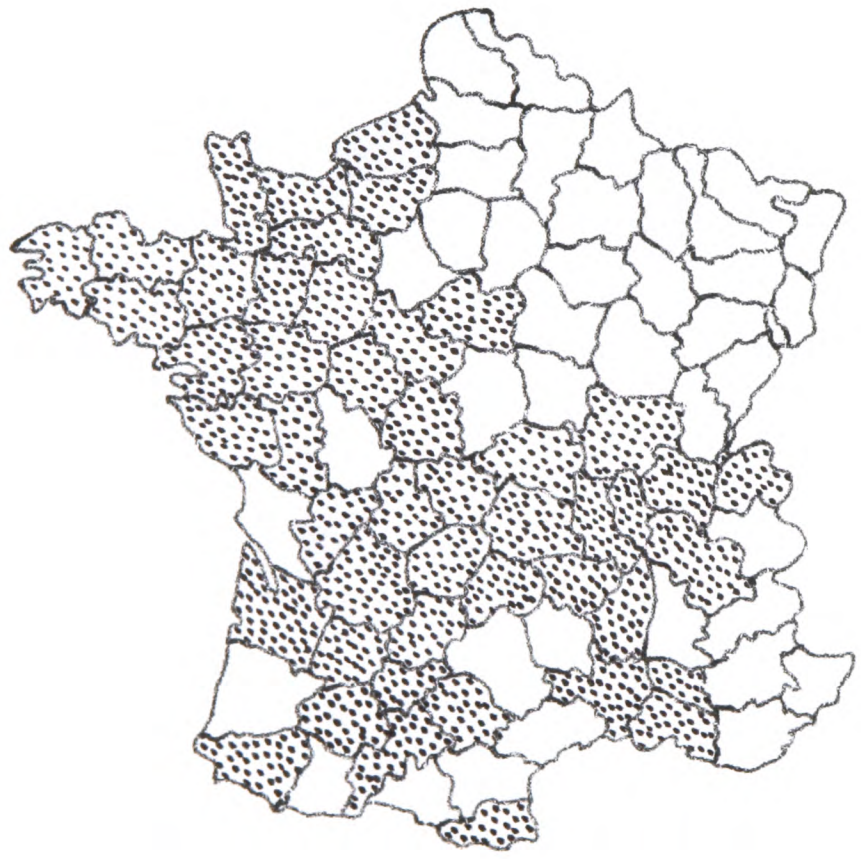


b. Phosphates

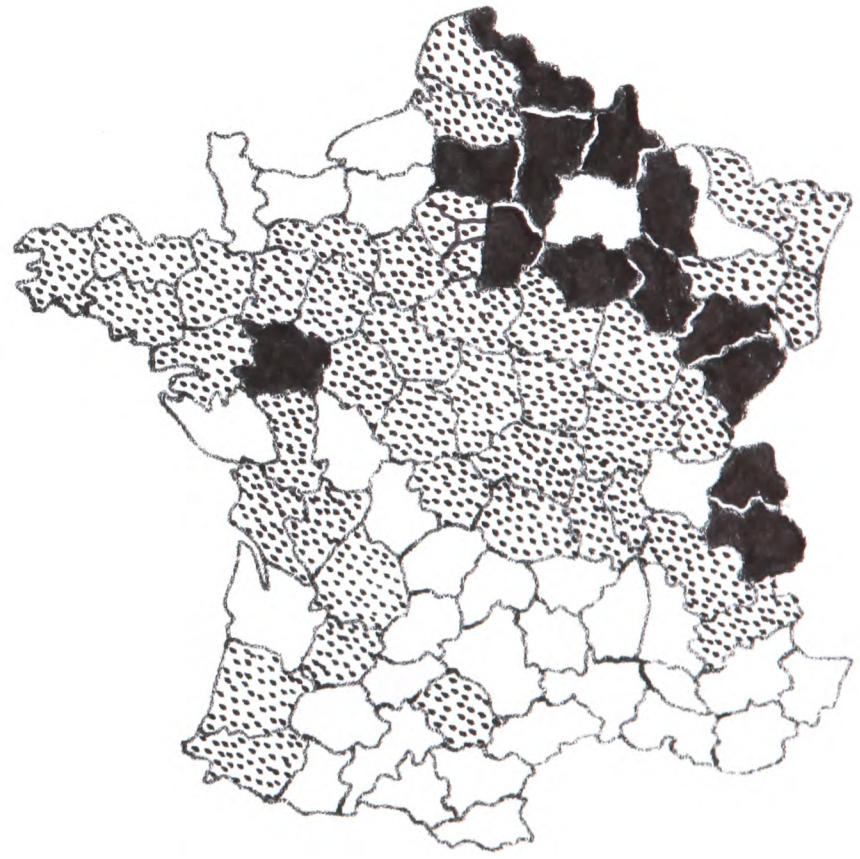


14. Rural electricity

a. **1955**



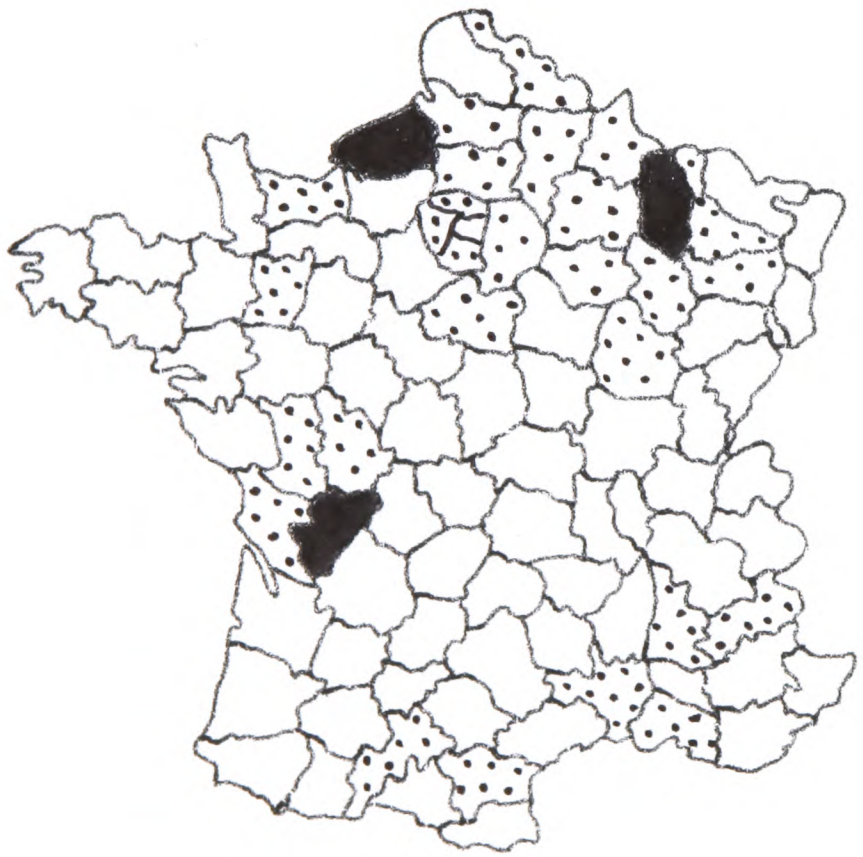
b. **1970**



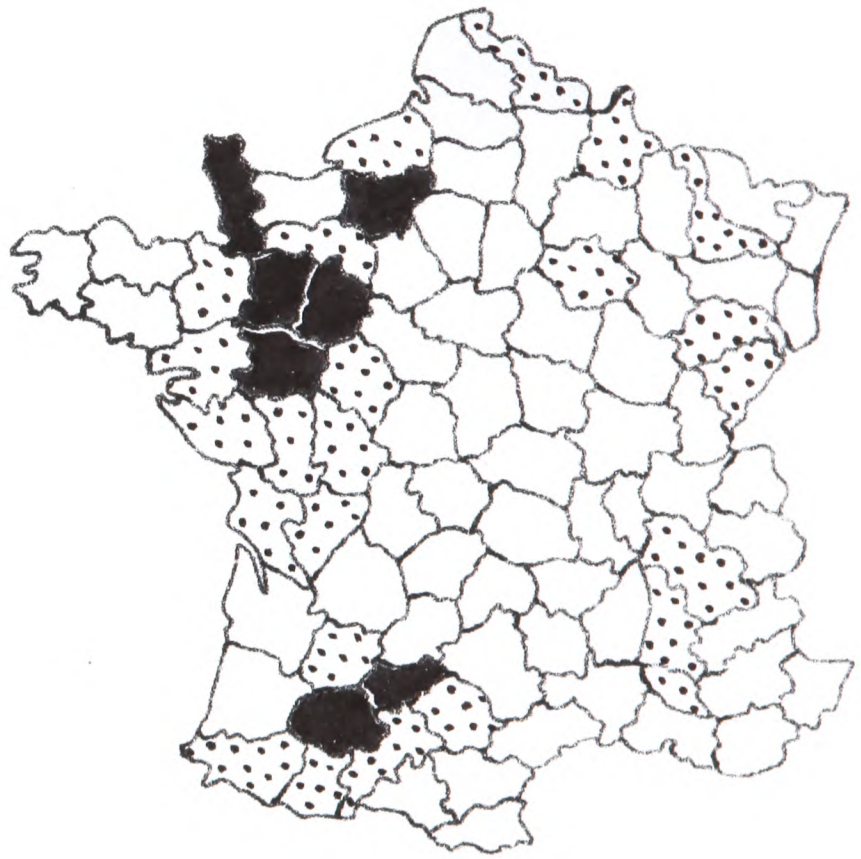
MACHINERY

15. Rakes and tedders

A. **1892**



B. **1929**

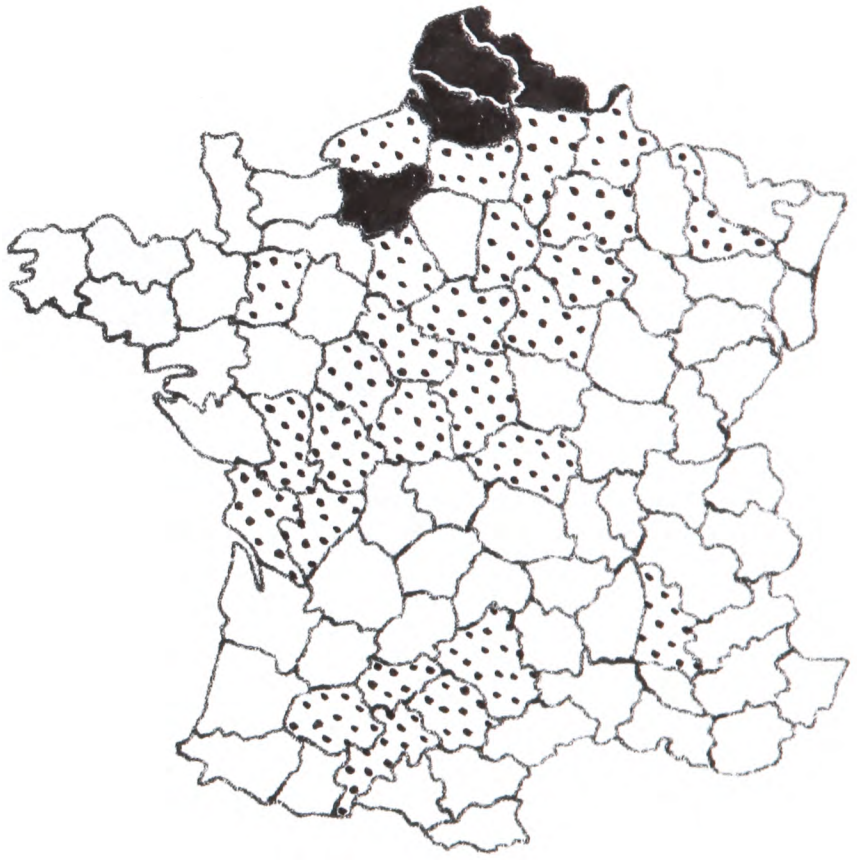


16. Binders

A. **1892**

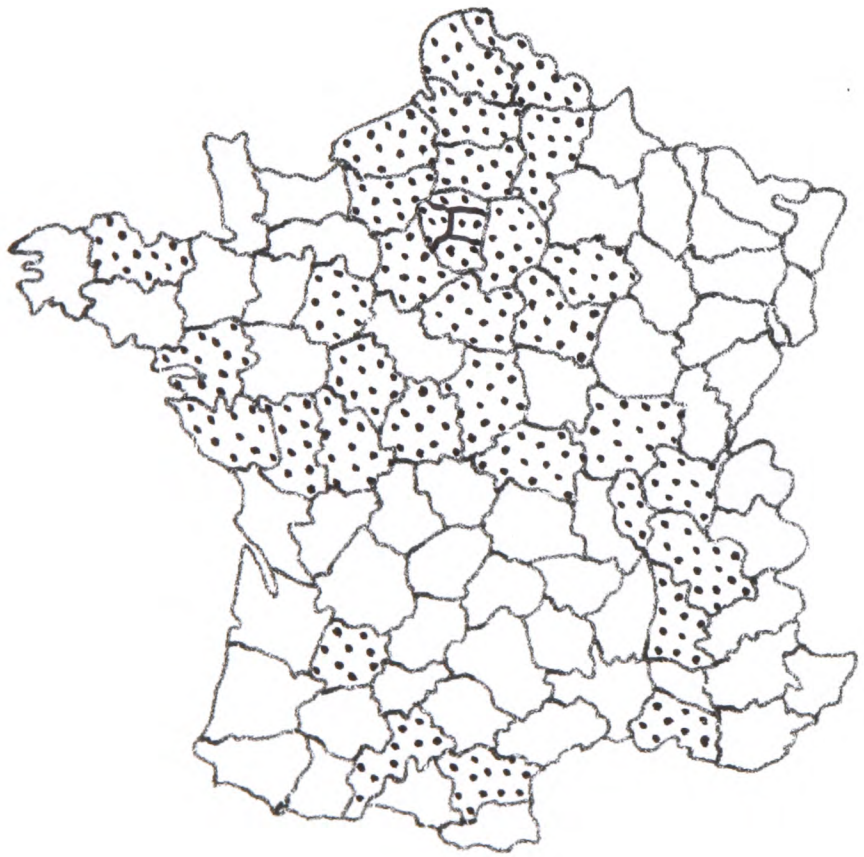


B. **1929**

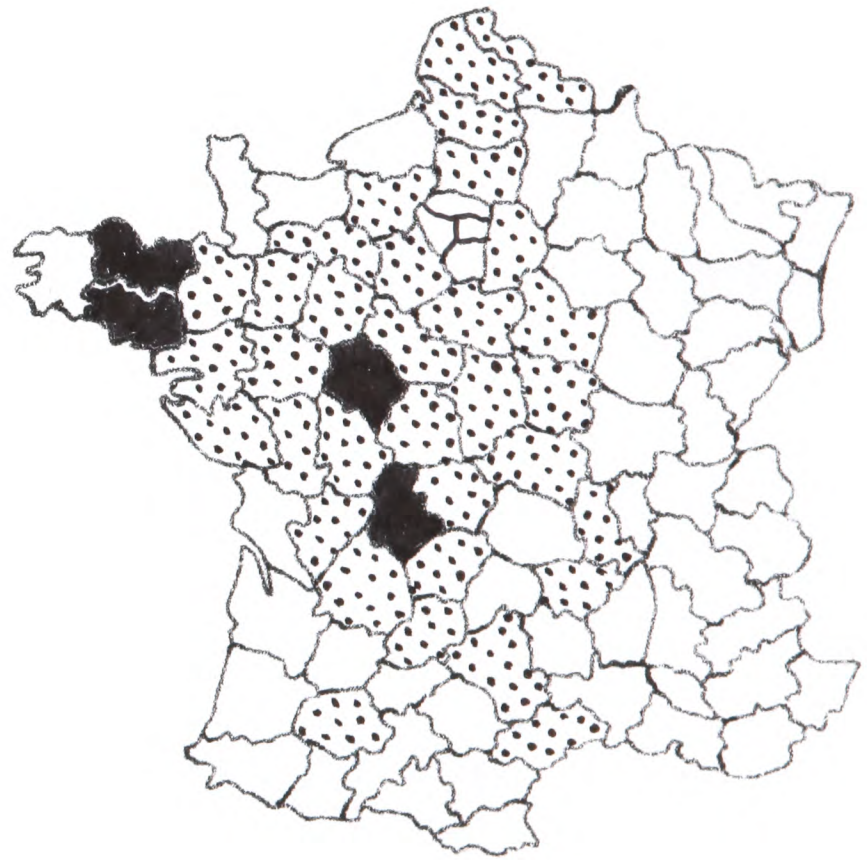


17. Steam engines

A. **1892**

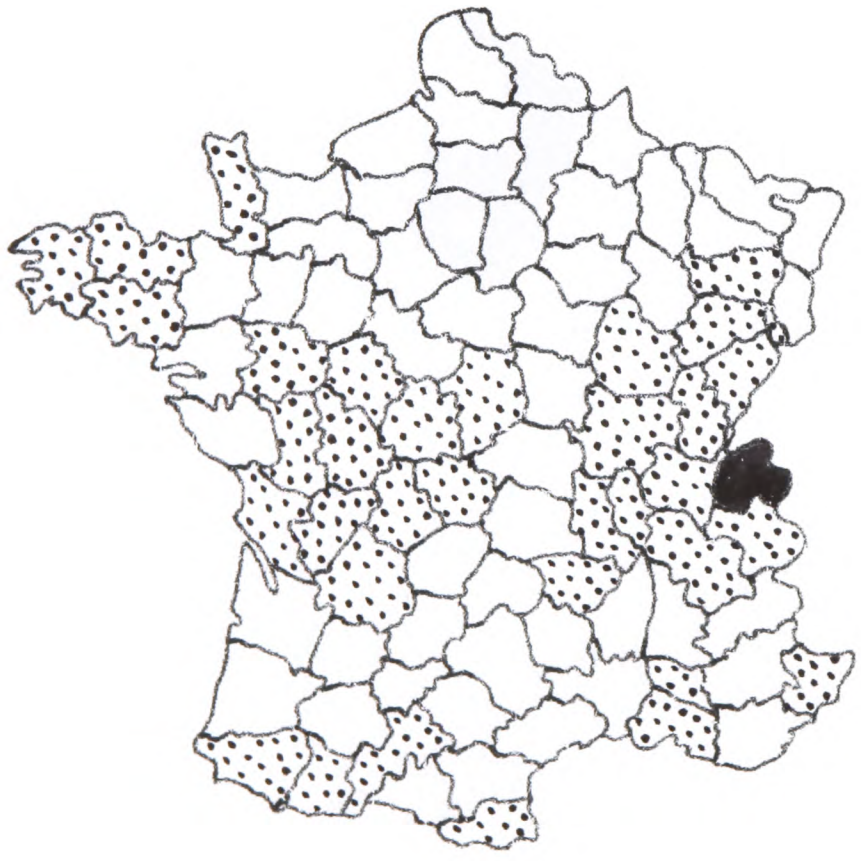


B. **1929**

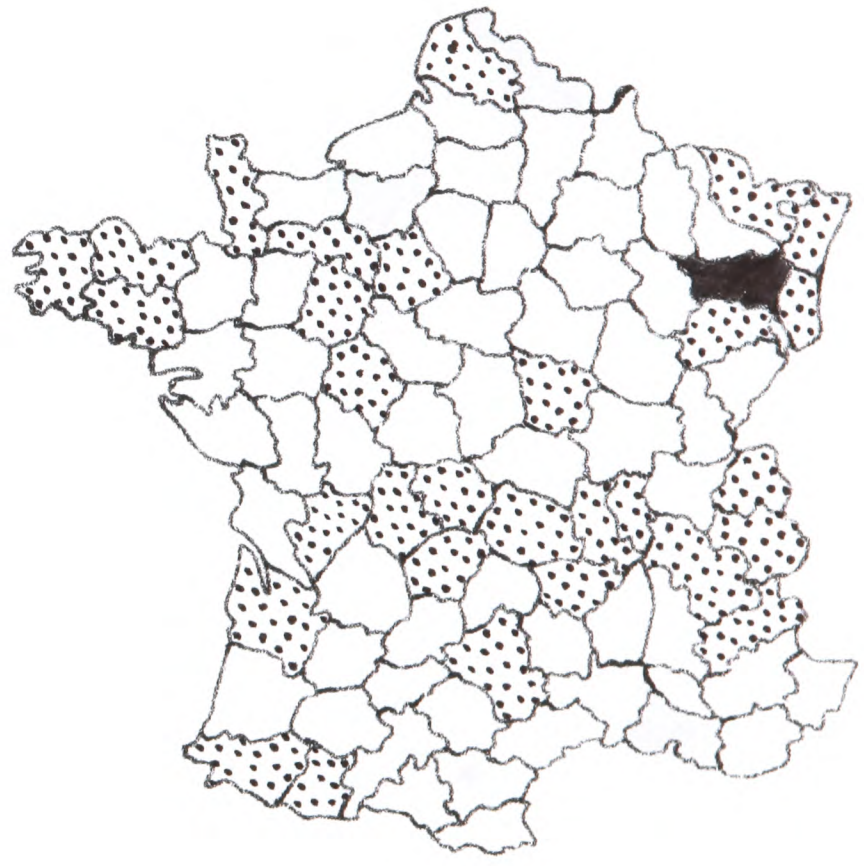


18. Waterwheels

A. **1892**

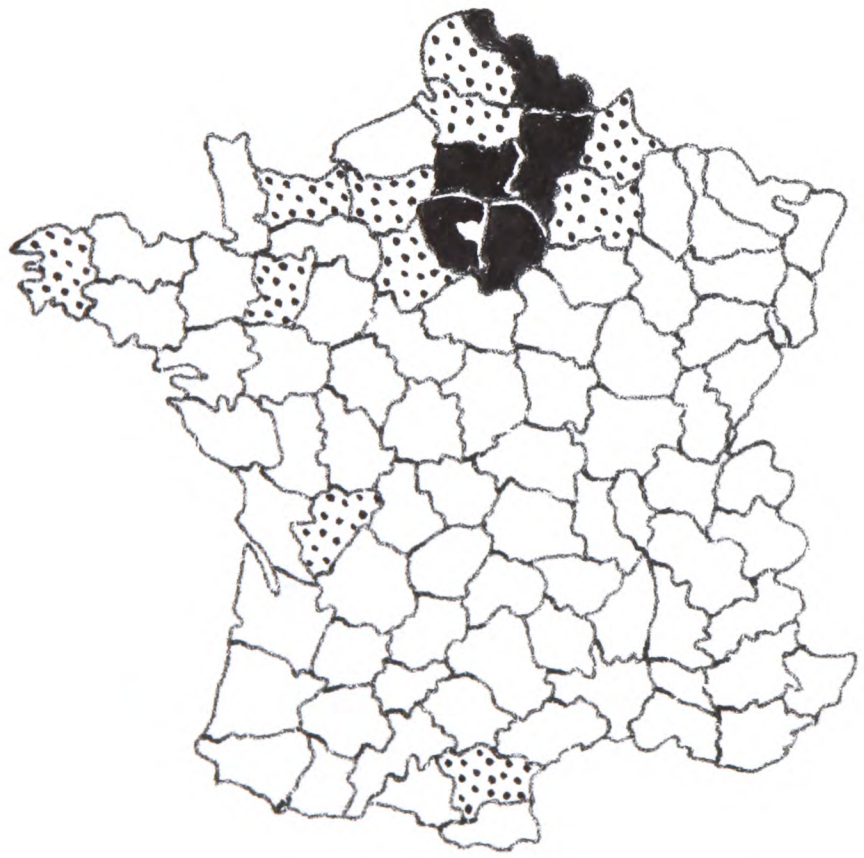


B. **1929**

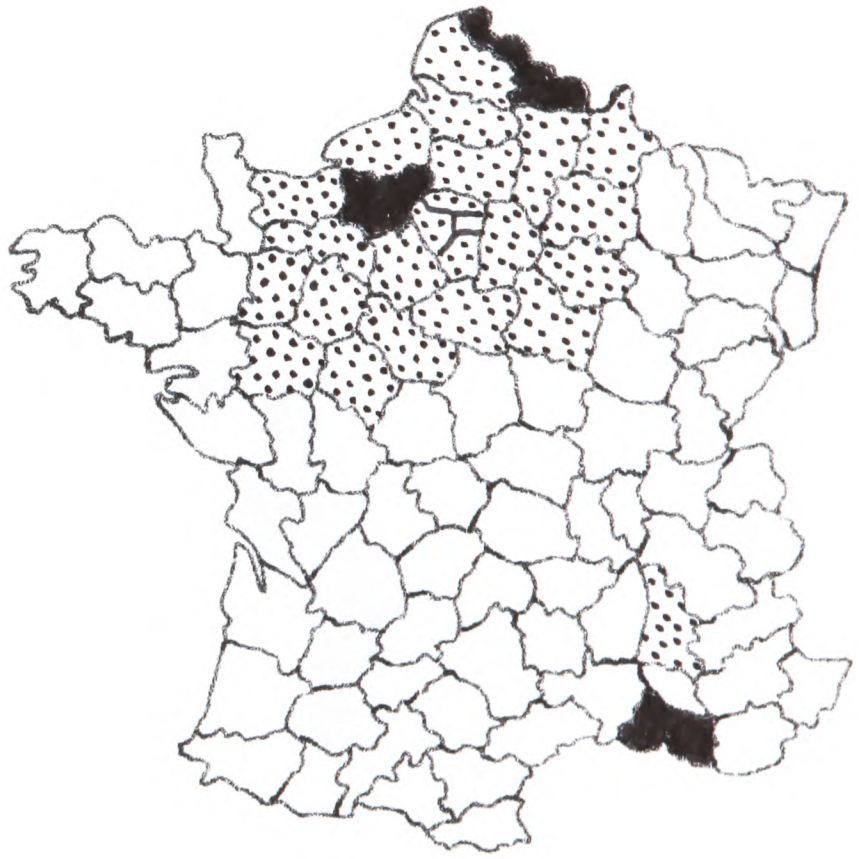


19. Fertiliser spreaders

A. **1892**



B. **1929**

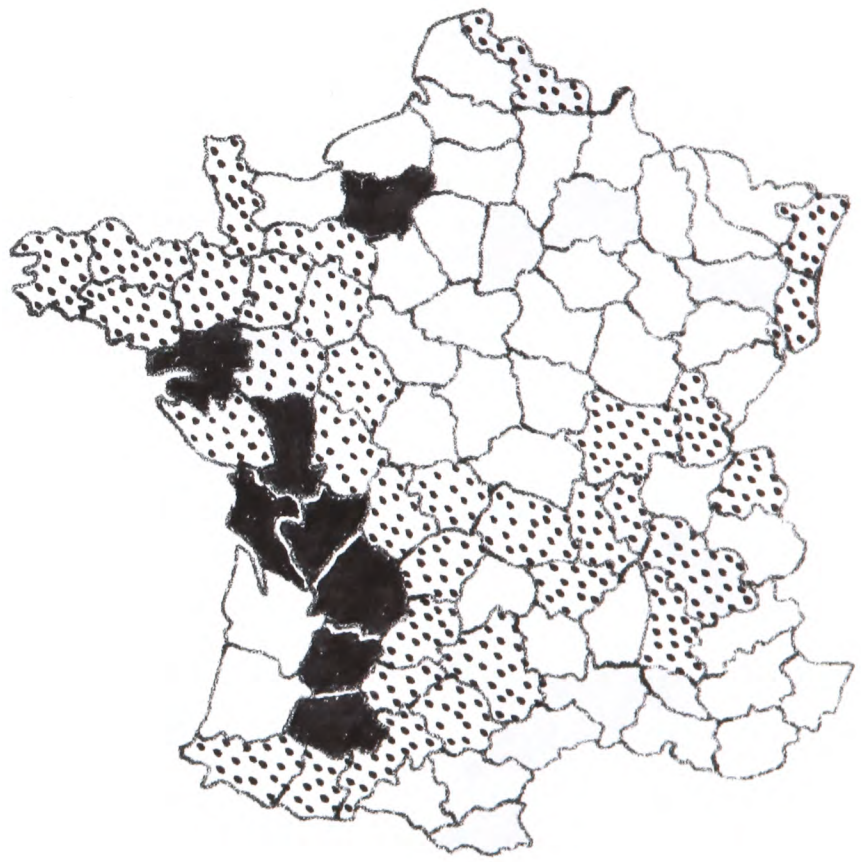


20. Mechanical mowers

A. **1892**

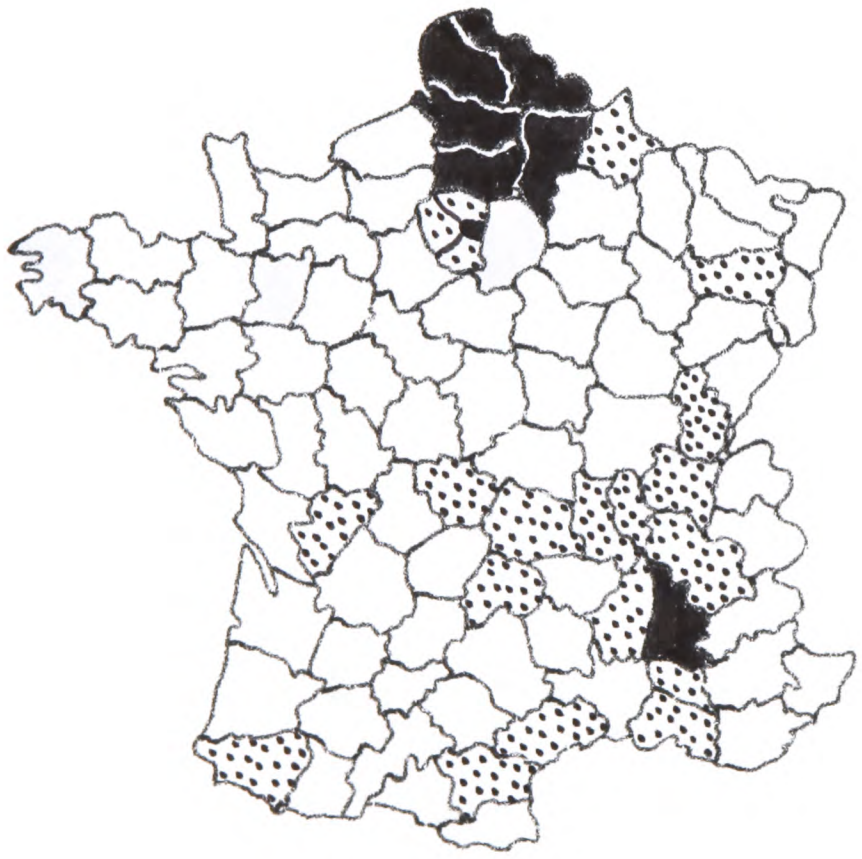


B. **1929**

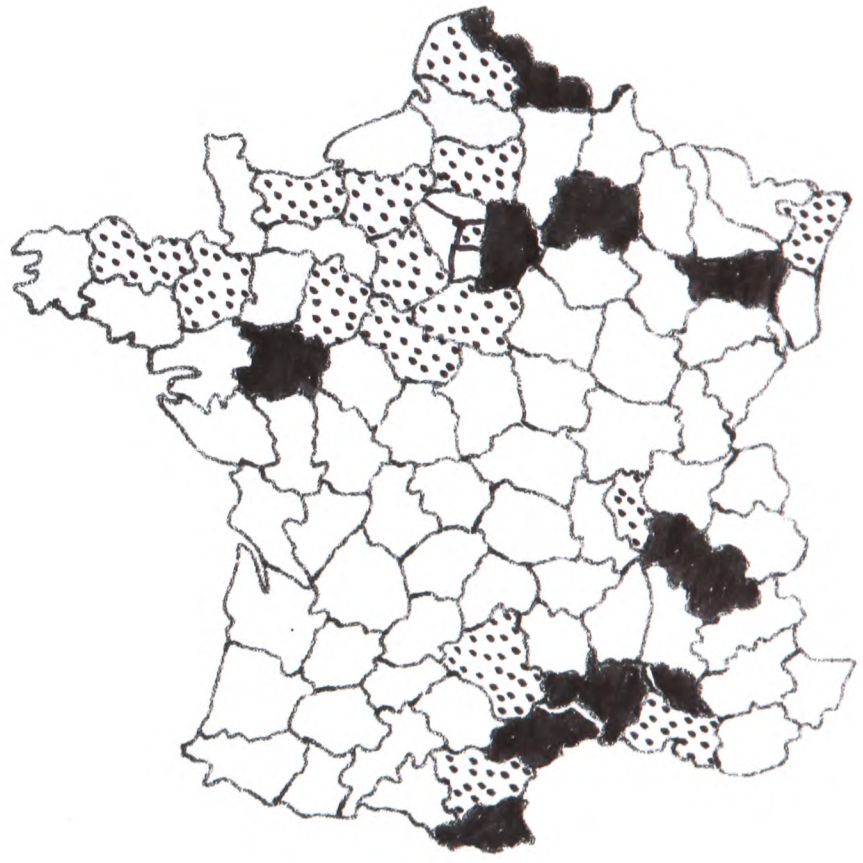


21. Multi - furrowed ploughs

A. **1892**



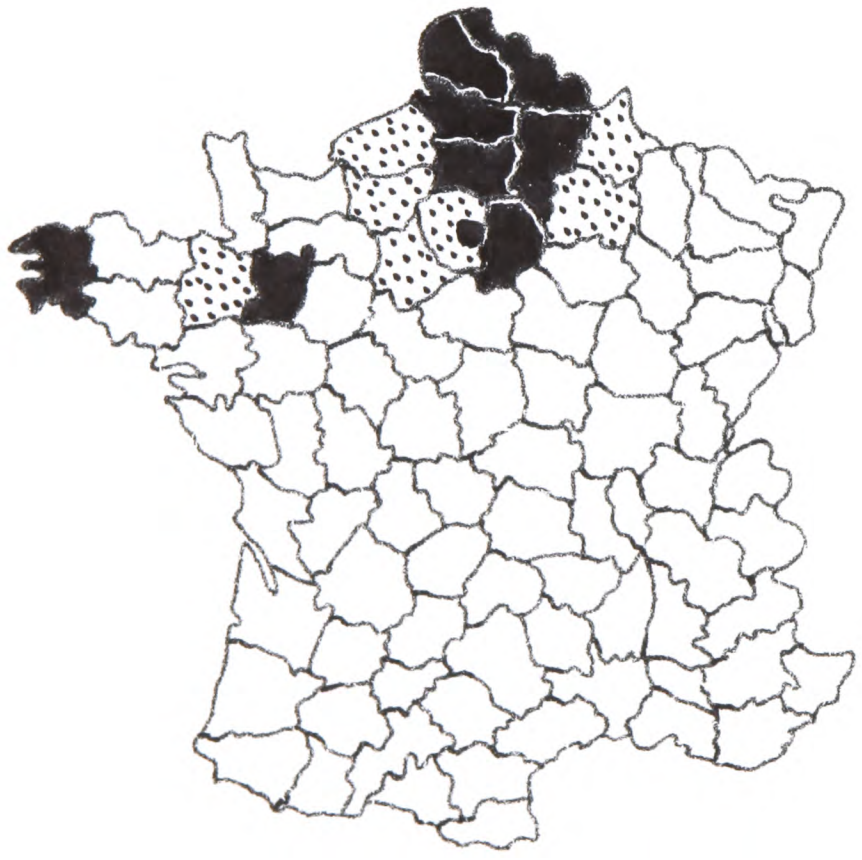
B. **1929**[1]



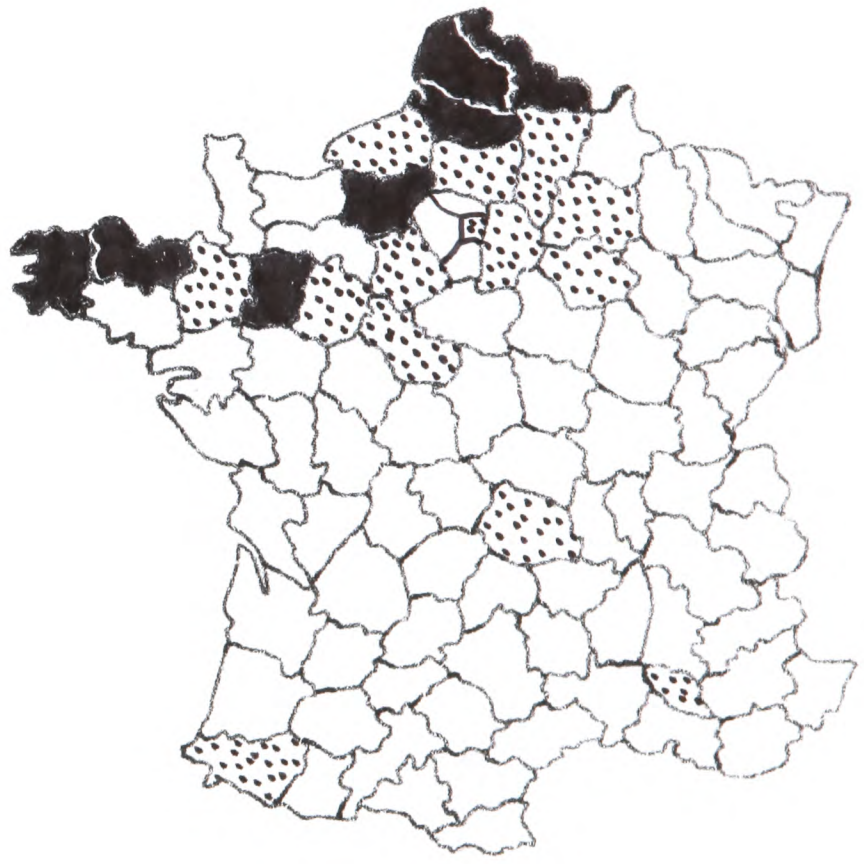
1 Change in definition

22. Mechanical drills

A. **1892**



B. **1929**



23. Windmills

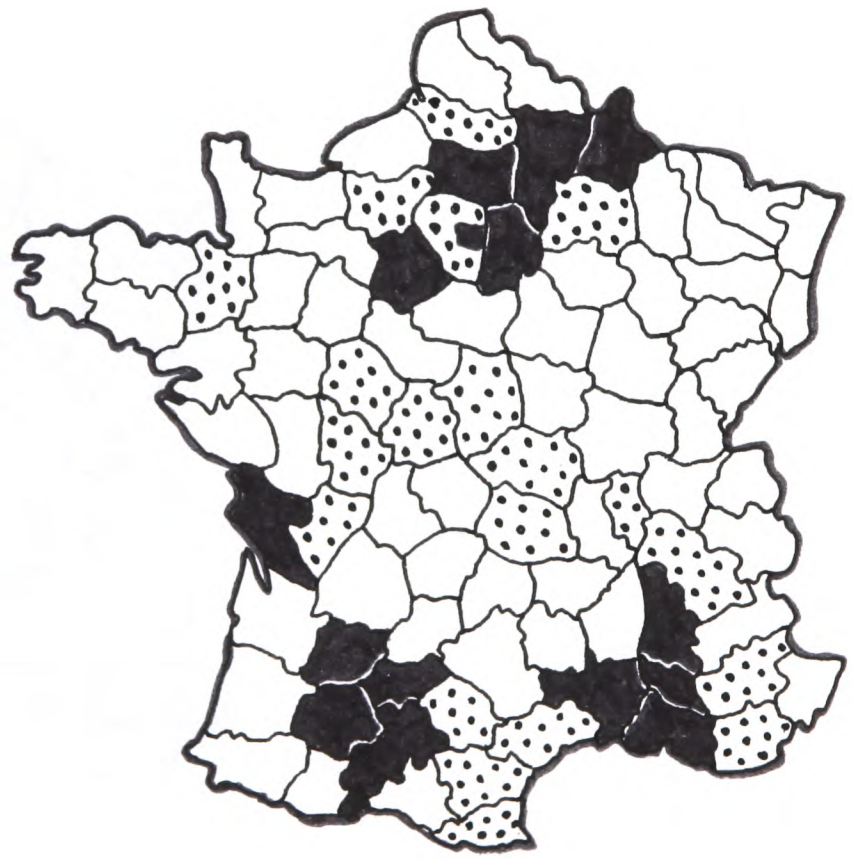
A. **1892**



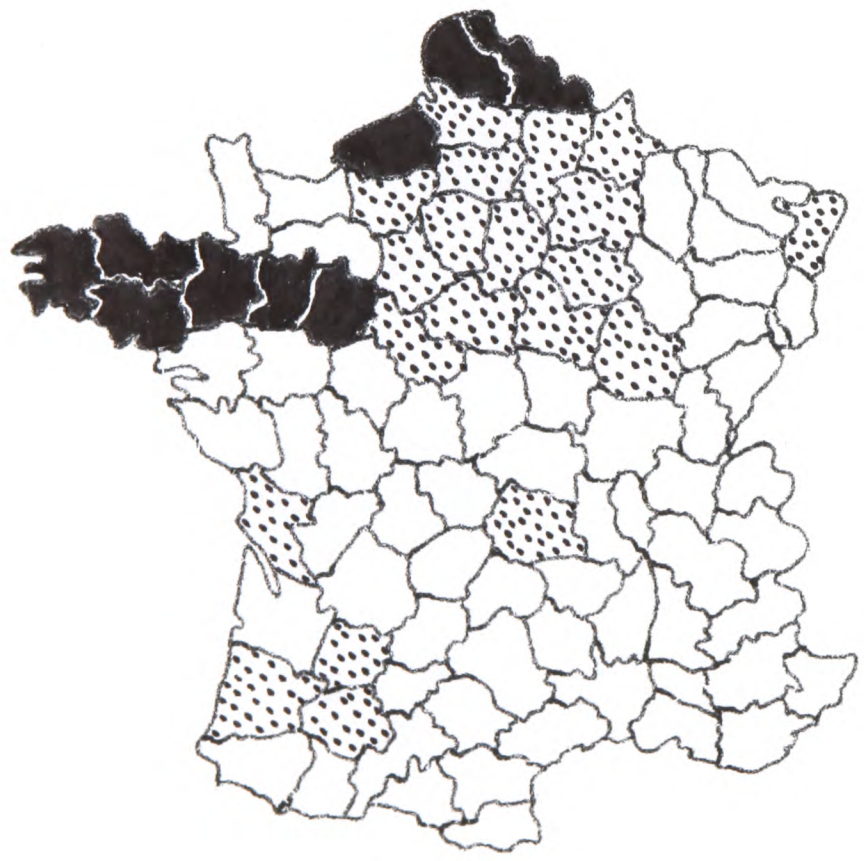
B. **1929**



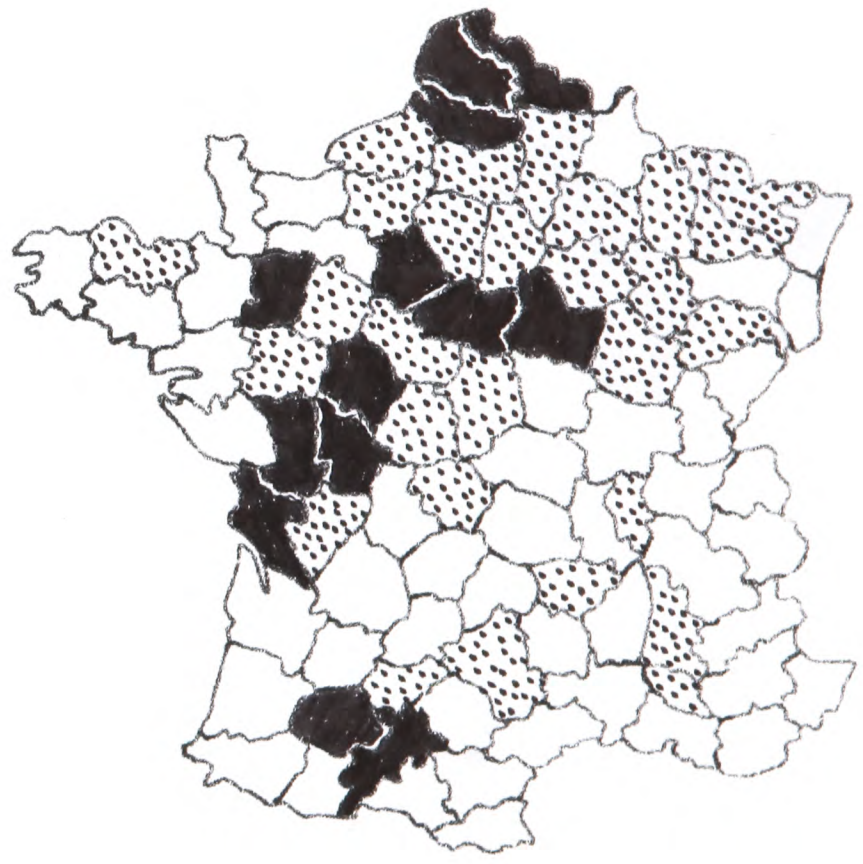
24. Tractors 1929



25. 1955 A. Mechanical drills

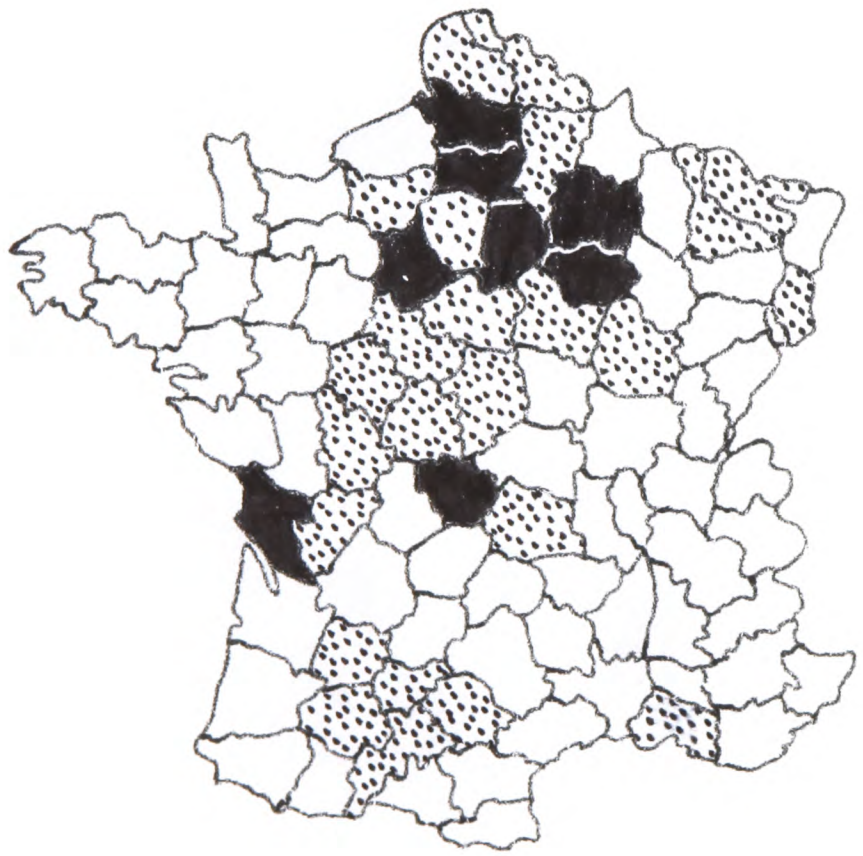


B. Binders

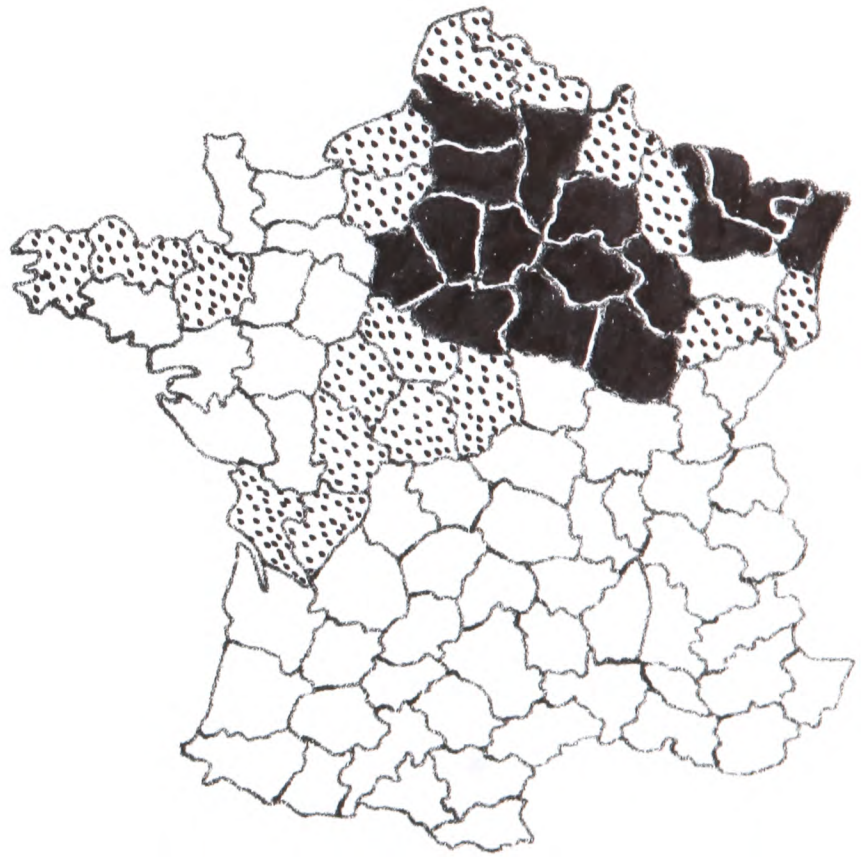


26. Combines

A. **1955**

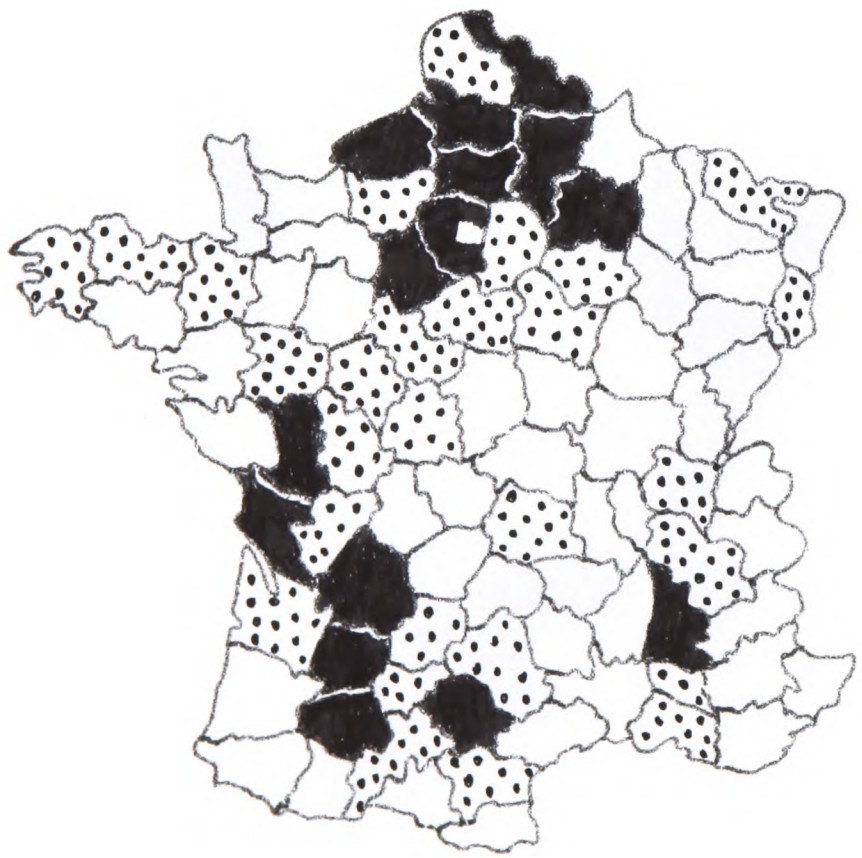


B. **1970**

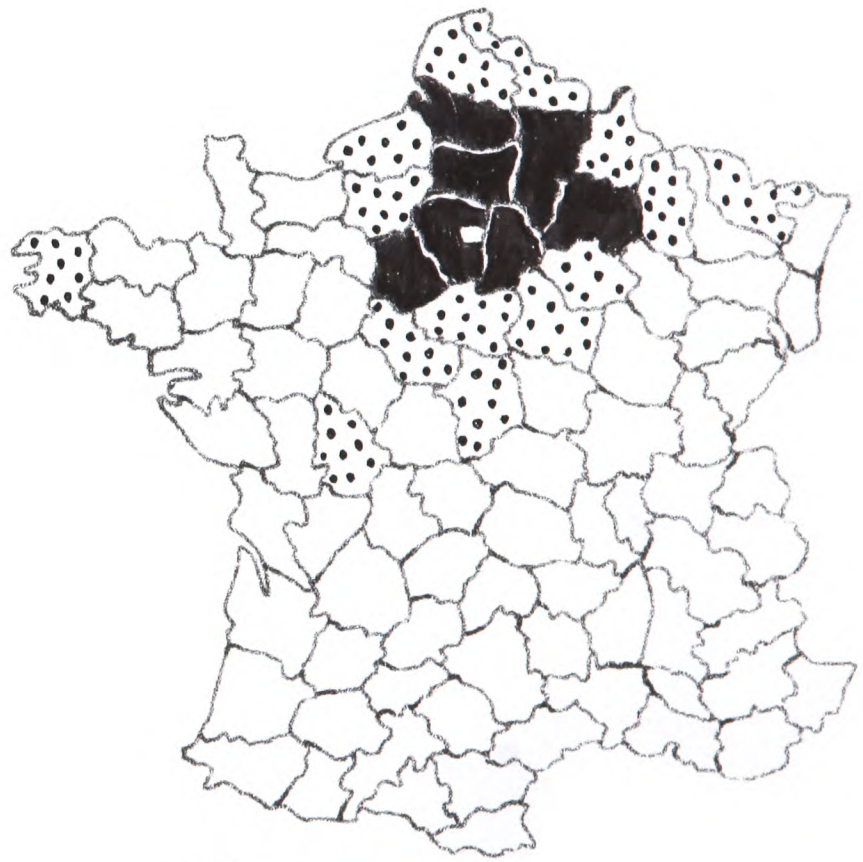


27. Tractors

A **1955**



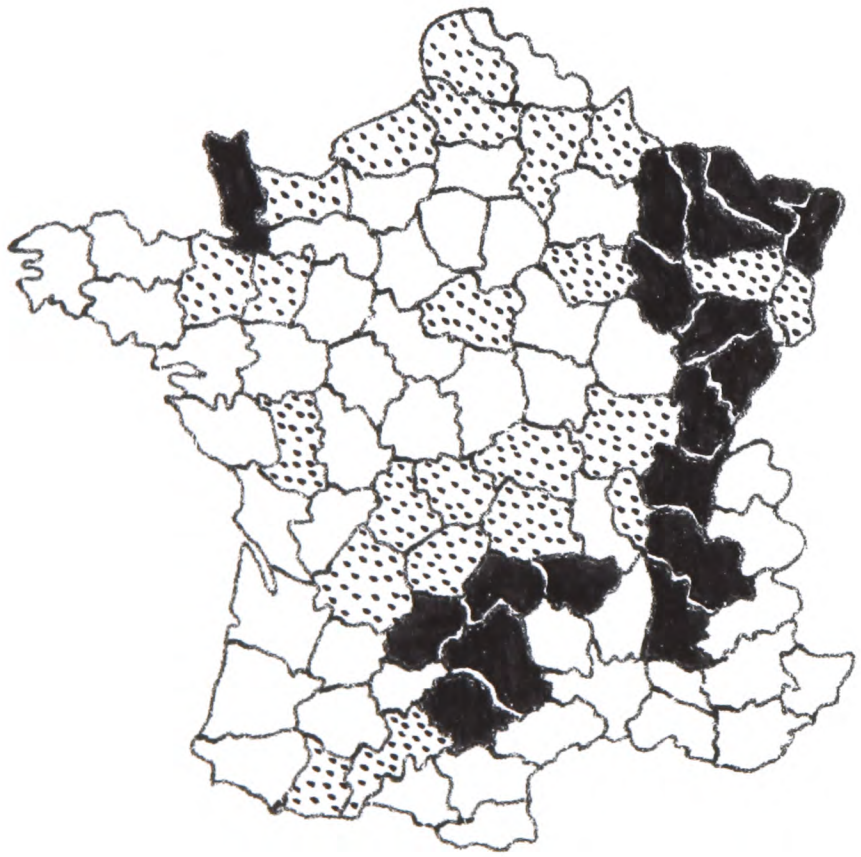
B. **1970**[1]



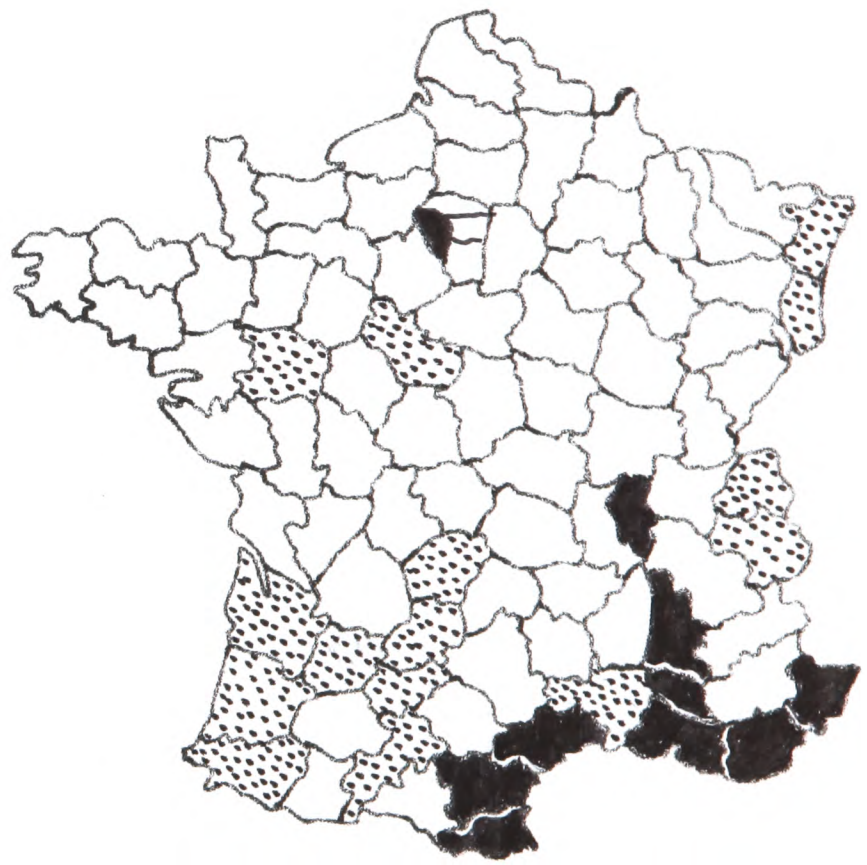
1 Change in definition

28. 1970

A. Balers



B. Cultivators



R E F E R E N C E S

- and -

S E L E C T E D B I B L I O G R A P H Y

ABBOTT W.F. (1977) 'Do we need Status-Specific Migration Theories?' S.S.R. 62, 1 85-98

Agence d'Urbanisme de l'Agglomération Grenobloise (1968) Réflexions pour un livre blanc sur la région grenobloise. Grenoble.

Agence d'Urbanisme de l'Agglomération Grenobloise (1969) Le livre blanc pour l'Aménagement de la région grenobloise. Grenoble.

Agence d'Urbanisme de l'Agglomération Grenobloise (1974) L'Analyse factorielle en composantes principales'. Grenoble.

ALLEN J.P. (1972) 'Migration fields of French Canadian Immigrants to Southern Maine'. Geog. Rev. 62, 376

ALLIX A. (1929) L'Oisans: étude géographique. Paris. Thèse. Colin.

ANDERSON R. (1955) Intermetropolitan migration: A comparison of the hypothesis of Zipf and Stouffer. Am. Soc. Rev. 20, 287-291.

ANDERSON T.R. (1956) Intermetropolitan migration: a correlation analysis. Am. Jour. Soc. 61, 459-462.

ANDERSON W.R. (1934) Mobility of rural families. Bull. Cornell Agr. Station 607, 19-20.

ANGELIER C-H (1940) 'Le bassin houiller de La Mure'. R.G.A. 246-346.

ARBOS P. (1919) 'Les communications dans les Alpes françaises'. A.G. 369-397.

ARDAGH J. (1970) The New France. Penguin.

ARIES P. (1949) Histoire des Populations Françaises. Paris.

ARMAND G. (1962) 'Aspects de la banlieu grenobloise: Fontaine, Saint Martin-d'Hères, La Tronche, St. Martin-le-Vinoux'. R.G.A. 59-87.

ARMAND G. (1974) Villes centres et organisation urbaine des Alpes du Nord. Le Passé et le présent. Imprimerie Allies, France. Grenoble.

ARMAND G., DURANO M-G., JAIL M., and VIGNY F. (1977) 'Bulletin Bibliographique des Alpes Françaises pour 1976'. Revue de Géographie Alpine Tome LXV No. 3 pp 339-364

ARMAND G. and MARIE A. (1966) Grenoble. La Doc. Franc.

ARMENGAUD A. (1965) La population française au XX siècle.

ARSDOL M.D., SABAGH Georges and BUTLER E.W. 1968 'Retrospective and Subsequent Metropolitan Residential Mobility'. Demography 5 1 249-267.

ASHTON J. (1950) The Social Origin of Farmers. Agricultural Research Institute Oxford unpub. B. Litt. thesis.

ASSAEL H. (1970) 'Segmenting markets by group purchasing behaviour: an application of the A.I.D. technique'. J. Marketing Res. 7, 153-158.

AUGÉ-LARIBÉ M. (1950) La politique agricole de la France de 1880 à 1940. Paris.

AUGÉ-LARIBÉ M. (1955) La révolution agricole. Paris. Albin.

BABONAUX Y. (1966) Villes et régions de la Loire moyenne. Thèse Lettres Paris.

BADOUIN R. (1971) Economie Rurale. Collection U. Armand Colin.

BAKER A.R.H. (1969) 'Reversal of the Rank-Size Rule: Some Nineteenth Century Rural Settlement Sizes in France'. Prof.Geog.No. 6 Vol. XXI pp 386-392.

BAKER A.R.H. (1975) 'A nation of peasants'. France from Waterloo to World War II. Geog. Mag. Vol.XLVIII No. 1 pp 24-30.

BAKIS H. (1975) 'Téléinformatique et disparités régionales en France'. L'Espace géographique 2, 141-148.

BARBICHON G. (1961) Adaptation et formation de la main-d'oeuvre des régions rurales au travail industriel. Paris O.C.O.E.

BARCLAY G.W. (1958) Techniques of Population Analysis. New York. Wiley.

BARNIER M.A. (1972) L'urbanisme à Grenoble de 1943 a 1957. T.E.R. Histoire. Grenoble.

BASTIDE H. and GIRARD A. (1962) 'Niveau de vie, emploi et croissance de la population'. Population No. 4 675-682.

BASTIDE H. and GIRARD A. (1974) 'Mobilité de la Population et motivations des personnes: une enquête auprès du public. III. Les facteurs de la mobilite'. POpulation No.6 1074-1086.

BASTIÉ J. (1966) L'Atlas de Paris et de la Région Parisienne. Berger-Levrault. Paris.

BATHER N.J. (1973) Population movements in the Oxford Sub-Region: A Test of some spatial models of migration. Oxford Regional Papers. Oxford Polytechnic. Department of Town Planning.

BAUTIER R-H and SORNAY J. (1968-71) Les sources de l'histoire économique et sociale du Moyen Age. Comtat Venaissin. Paris.

BEAUJEU-GARNIER J. (1969) La Population Francaise. Armand Colin.

BEIJER G. (1963) Rural migrants in urban setting. The Hague, Martinus Nijhoff.

BELL W. (1956) 'Familism and suburbanization'. Rural Sociology 21, 276-283.

BELTRAMONE A. (1961) La mobilité géographique et professionelle en France (1851-1954). Thesis docteur ès sciences économiques Aix-Marseille.

BELTRAMONE A. (1962) 'Sur la mesure des migrations intérieures au moyen des données fournis par les recensements'. Population 4, 703-724.

BELTRAMONE A. (1966) La mobilité géographique d'une population. Gauthier-Villars, Paris.

BENNOUNE M. (1975) 'The Maghribin migrant workers in France'. Race and Class XVII, 1, 39-56.

BENOIT J. (1965) 'L'évolution démographique de la population française'. Information géographique.

BERGUES H. (1973) 'L'immigration de travailleurs African noirs en France et particulièrement dans la région Parisienne'. Population 28(1) pp 59-80.

BERRY B.J.L. (1966) Interdependency of Flows and Spatial Structure: A general field theory formulation. Essays on Commodity Flows and Spatial Structure of the Indian Economy.

BERTILLON J. (1911) La dépopulation de la France. Ses conséquences. Ses causes. Mésures à prendre pour la combattre. Paris. Librairie Felix Alcan.

BESHERS M. (1967) 'Computer models of social processes: The Case of Migration'. Demography 4, 2 838-842.

BETEILLE R. (1972) 'Migration in a predominantly rural department - Charente'. Norois 75, 519-539.

BETHEMOND J. (1972) Le thème de l'eau dans la vallée de la Rhône. Essai sur la genèse d'un espace hydraulique. Saint-Etienne.

BIENFAIT J. (1970) 'Le recessement de 1936 Lyon ou 120,000 Lyonnais Fictifs' Grandes Villes et Petites Villes. C.N.R.S. 487-501.

BILLET J. (1973) 'Tourisme et emploi dans les Alpes'. R.G.A. LXI, 509-520.

BLACHE J. (1931) Les massifs de la Grande-Chartreuse et due Vercors. Thèse. Grenoble. Allier.

BLACK R. (1970) 'Toward a factorial Ecology of Flows'. Econ. Geog. 59-67.

BLANCHARD R. (1935) Grenoble, étude de géographie urbaine. Grenoble. Didier-Richard.

BLANCHARD R. (1941) 'Pourquoi Grenoble est devenue une grande ville'. R.G.A. 377-390.

BLANCHARD R. (1944-1956) Les Alpes occidentales. 7 vols. Grenoble. Arthaud.

BLANCHARD R. (1974) 'Les alpes occidentales'. Revue régionale d'éthnologie - le monde alpin et rhodamien. Centre Alpin et rhod. d'ethn.

BLOCH M. (1948) 'Les transformations des techniques comme problèmes de psychologie collective'. Journal de psychologie normale et pathologique XII, 104-120. Innovation.

BLOCH M. (1966) French Rural History: An essay on its basic characteristics. Routledge and Kegan Paul.

BOGUE D.J. (1959a) The Use of Place of Birth and Duration of Residence Data for Studying Internal Migration. United Nations UNESCO.

BOGUE D.J. (1959b) 'Internal migration' in P.M.Harmer and O.D.Duncan (eds.) The study of population. Chicago 485-509.

BOGUE D.J. (1969) Principles of demography. Wiley, London.

BOGUE D.J., SHRYROCK H.S., and HOERMANN S.A. (1957) 'Sub-regional migration in the United States 1935-40' Vol. 1. Scripps Foundation Studies in Population Distribution No.5 Oxford, Ohio.

BOREJKO W. (1968) 'Study on the effectiveness of migrations' Geog. Pol. 14, 305-311.

BOSERUP C. (1965) The conditions of Agricultural Growth. Chicago.

BOUCHAYER F. (1954) Les pionniers de la houille blanche et de l'électricité. Paris. Dalloz.

BOURDIEU P. (1962) 'Celibat et condition paysanne'. Etudes Rurales 11, 32-135.

BOURGEOIS-PICHAT J. (1972) 'The general development of the Population of France since the 18th Century'. In Colass and Revelle (eds.) Population and Social Change. Edward Arnold.

BOUSSINGAULT (1834) 'L'économie rurale dans ses rapports avec la chimie, la physiologie et la météorologie'. Paris.

BOWLER I. (1976) Recent Developments in the Agricultural Policy of the European Economic Community. Geography 61, 1 28-30

BRACEY H.E. (1958) 'A note on Rural Depopulation and Social Provision'. Soc. Rev. 6, 67-74.

BRACKEN I.J. (1976) 'Estimation and Cluster Analysis of Net Migration, Age Profiles for Urban Areas in England and Wales'. Regional Studies 10, 53-69.

BRONGNIAT P. (1971) La région en France. Armand Colin, Paris.

BROWN L.A. (ed.) (1970) Population and migration in an urban context: a spatial perspective. Dept.Geog. Ohio State Univ.Discussion Paper No. 13.

BROWN L.A. and HOLMES J. (1971) 'Intra-urban migrant lifelines - a spatial view'. Demography 8, 1 103-122.

BROWN L.A. and HOLMES J. (1971) 'Search behaviour in an intra-urban migration context: a spatial perspective'. Environment and Planning 3. 307-326.

BROWN L.A. and MORTON F.B. (1970) 'Functional distance: an operational approach'. Geog. Analysis 2, 76-83.

BROWN A. and LONGBRAKE B. (1970) 'Migration Flows in Intraurban Space: Place Utility Considerations'. AAAG 60, 368-384.

BROWN L.A. and MOORE C.G. (1970) 'The intra-urban migration process: a perspective'. Geografiska Annaler B 52(1), 1-13.

BROWN L.A., ODLAND J. and GOLLEDGE R.G. (1970) 'Migration, Functional Distance and the urban Hierarchy'. E.G. XLVI, 472-485.

BRUN F. (1974) 'La réinstallation des agriculteurs pieds-noirs dans le Midi méditerranéen'. Ann. de Geog. 460, 676-683.

BRUN M. (1940) 'Pont-de-Claix, étude d'une bourgade industrielle récente'. R.G.A. 199-211.

BRUNET P. (1974) 'L'evolution récente des paysages ruraux français'. Geographica Polonica 29. Special edition - modernisation des campagnes.

BRUNHES J. (1936) La Géographie Humaine. Tomes I, II and III. Paris. Librarie Felix Alcan.

BRUTON J. (1970) An introduction to factor analysis and its application in planning. Oxford Polytechnic Dept. of Planning. W.P. No. 8.

BRYANT C.R. (1970) Urbanization and Agricultural Change since 1945: a case study from the Paris region. Unpub. Ph.D. Thesis. London.

BRYANT C.R. (1973) 'Urbanization et structures agricoles de la région parisienne entre 1955 et 1966'. Etudes Rurales 49-50, 205-244.

CABOURDIN G. (1970) 'Mariages et origine des epoux dans un bourg Loirain, Vezelize 1578-1633.' Annales de Demographie Historique 151-155.

CADIOU E. (1970) 'Les mouvements migratoires de la population de la région Rhône-Alpes de 1954 a 1962'. Grandes Villes et Petites Villes C.N.R.S. pp 79-86.

CALDWELL J.C. (1968) 'Determinants of rural-urban migration in Ghana'. Pop. Studs. 22, 3, 361-377.

CALOT G., and DEVILLE J-C (1971) 'Nuptualité et fécondité selon le milieu socio-culturel'. Economie et Statistique 29, 3-42.

CALOT G., MAGNIEZ S. and BUSS H. (1969) L'evolution de la population au niveau regional et urbain 1962-68. Paris.

CAMPBELL K.O. (1960) Rural population movements in relation to economic development. pp 309-334 in Internat. Assoc. of Ag. Economists. Proceedings of the tenth International Conference of Agricultural Economists (Mysore, India 1958). London.

CANT R.G. (1971) 'Changes in the location of manufacturing in New Zealand 1957-1968 on application of three-mode factor analysis'. N.Z. Geogr. 38-55.

CAPLOW T. (1949) 'Incidence and direction of residential mobility in a Minneapolis sample'. Soc. Forces XXVII, 413-417.

CARROTHERS G.A.P. (1956) 'An Historical Review of the Gravity, and Potential Concepts of Human Interaction'. J. Am. Inst. Plan. 22.

CASTLES S. and KOSACK G. Immigrant Workers and Class STructure in Western Europe. London.

CATTELL R.B. (1952) Handbook of multivariate experimental psychology. Rand McNally and Co. Chicago.

CATTELL R.B. and BAGGALEY A.R. (1960) 'The salient variable similarity index for factor matching'. Br.J. Stat. Psychology 13, 33-6.

CAVALLI SFORZA L. (1966) The distribution of migration distances: models, and applications to genetics. In J. Sutter (ed.) Human Displacements.

CEBULA R.J. (1975) 'Migration, economic opportunity and the quality of life: an analysis for the United States according to race, age and sex'. Annals of Regional Science 9(1), 127-133.

CEBULA R.J. et al (1973) 'Some determinants of interstate migration of blacks 1965-1970'. Western Economic Journal 11 (4), 500-505.

CENTRE EUROPEAN D'ETUDES DE POPULATION (1954) Etudes Europpéenes de population. Paris.

CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (1970) Grandes Villes et Petites Villes. Démographie et croissance urbaine. Démographie et Editions du Centre. Paris.

CEPEDE M. et al (1963) 'Mobilité des travailleurs en agriculture et influence du Marché Commun'. Economie Rurale 58, 17-28.

CHABERT L. (1973) 'L'aluminium en Maurienne'. Rev. Geog. Alp. LXI, 31-62.

CHABERT L. (1973) 'Géographie fiscale des Grandes Alpes de Savoie Essai méthodologique'. R.G.A. LXI, 335-370.

CHADULE GROUPE(1975) 'Classification socio-economique de 176 communes autour de Grenoble'. Revue de Geographie Alpine LXII, 2, 175-203.

CHAMBERS J.D. and MINGAY G.E. (1966) The Agricultural revolution 1750-1880. London.

CHAMUSSY H. (1973) 'Réflexions sur un grand axe routier transalpin: Genève-Milan'. Rev. Geog. Alp. LXI,121-147.

CHAPIN F.S. and BRAIL R.K. (1969) 'Human activity systems in the metropolitan US' Environment & Behaviour 1, 107-130.

CHARNIER J.F. (1964) 'Problèmes de l'exode rural'. Rev. Geog. de l'Est 159-172.

CHARRIER J.B. (1964) 'Problèmes de l'exode rurale: l'attraction démographique de Nevers, Dijon, Paris sur les communes rurales de la Nièvre et de la côte d'Or'. Revue Geog. de l'Est 4, 2, 145-162.

CHASTELAND J.C. and PRESSAT R. (1962) 'La nuptualité des générations françaises depuis un siècle'. Population 215-240.

CHATAIN C. (1925) L'industrie drapière viennoise. Vienne.

CHATELAIN A. (1954) 'La formation de la population lyonnaise. L'apport d'origine montagnarde (XVII^{e}-XX^{e} siècle)'. Rev. Geog. Lyon. 91-115.

CHATELAIN A. (1960) 'La géographie des salaires en France et son evidence sur les migrations de population'. Revue de Geographie de Lyon 35, 4, 381.

CHATELAIN A. (1963) 'Les migrations de la population'. Revue economique 14, 1 1-17.

CHATELAIN A. (1971) 'L'attraction des trois plus grandes agglomérations françaises Paris-Lyon-Marseille en 1891'. Ann. de Demog. Hist. 27-41.

CHAUHAN D.S. (1958) 'Social costs of migration'. J. Soc.Scis. 1, 29-51.

CHESNAIS J-C.(1974) 'La mortalité par accidents en France depuis 1926'. Population 6 1104-1147.

CHESNAIS J-C. and NIZARD A. (1976) 'Population et ancienneté du logement. Analyse des résultats du recessement de 1968'. Population 31(2) 301-340.

CHEVALIER A. (1946) Révolution en Agriculture. Paris P.U.F.

CHEVALIER L. (1946) 'Towards a history of population'. Reprinted in Population in History eds. Glass and Eversley.

CHEVALIER L. (1950) La formation de la population parisienne au XIX^{e} siècle. Travaux et documents de l'INED No. 10 Paris. P.U.F.

CHEVALIER L. (1958) Classes laborieures et classes dangereuses à Paris pendant la première moitre du XIX^{e} siècle. Paris.

CHEVALIER L. (1967) Le problème démographique nord-Africain. INED Cahier No. 6.

CHILD D. (1970) The essentials of factor analysis. Holt, Reinhardt and Winston. London.

CHIVA I. and RAMBAUD P. (eds.) (1972) Les études rurales en France; Tendances et organisation de la recherche. Mouton Paris, Le Haye.

CHOMBART de LAUWE J. (1946) Bretagne et Pays de la Garonne. Évolution Agricole comparée depuis un siècle. P.U.F. Paris.

CHOMBART de LAUWE P.H. (1952) Paris et l'agglomeration Parisienne. Bibliotheque de Sociologie contemporaire Series B.

CHOMEL V. (1963) 'Le Dauphiné sous l'Ancien Régime, publications relatives à l'histoire moderne de la province de 1935 à 1962'. Cahiers d'Histoire. Grenoble.

CHRISTIAN W. and BRADEN W. (1966) 'Rural migration and the gravity model'. Rural sociology 31, 1, 73-80.

CLAESON C-F. (1964) 'A regional chorological analysis of the Cinema Audience. Construction and Application of Demographic Gravity Models'. Geog. Annales XLVI, 4.

CLAESON C-F. (1968) 'Distance and Human Interaction: Review and discussion of a series of essays on geographic model-building'. Geog. Annales 50B 2, 142-161.

CLAESON C-F. (1969) 'A Two-stage model of In-migration to Urban Centres: Deductive Development of a variant of the Gravity Formulation'. Geografiska Annales 52B, 127-141.

CLAESON C-F. (1974) 'Interregional Population Movement and Cumulative Demographic Disparity: An analysis of census data for Tanzania'. G.A. 56B, 2, 105-120.

CLAPHAM J.H. (1936) The economic development of France and Germany 1815-1914.

CLARK C. (1975) 'The Stability of village populations'. Urban Studies 12, 109-111.

CLARK C. and HASWELL M. (1970). The economics of subsistence agriculture.

CLARK D. (1973) 'Urban linkage and regional structure in Wales: an analysis of change 1958-68'. TIBG 58, 41-58.

CLARK W.A.V. (1970) 'Measurement and Explanation in Intra-Urban Residential Mobility'. TESG 49-58.

CLARK W.A.V. (1972) Some vector representations of intra-urban residential mobility. IGU Symposium.

CLARKE J.I. (1973) 'Population in movement', in Chisholm M. and Rodgers B. (eds.) Studies in Human Geography, Chapter 3, 85-124.

CLARKE J.I. (1975) Population and scale. Univ. of Durham. Dept. of Geog. Census Research Unit. W.P.1.

CLARKE J. and PINCHEMEL P. (eds.) (1976) Human Geography in France and Britain. S.S.R.C.

CLARKE J.I. and RHIND D.W. (1975) The relationship between the size of cereal units and the characteristics of population structure. Univ. of Durham, Dept. of Geog. Census Research Unit. W.P.5.

CLAUDE-GÉRARD M. (1974) 'Aspects demographiques de l'urbanization'. Economie & Statistique 54, 41-48.

CLEMENT P. and VIEILLE P. (1960) L'exode rural. Historique, causes et conditions, sélectivité, perspectives. Études de comptabilité nationale. Paris. Imp. Nat.

CLERC P. et al (1972) Migrations et croissances démographiques. Cahiers du Département de Géographie de l'Université de Caen.

CLOUT H.D. (1967) The Pays de Bray: a study of land use change 1750-1965. M.Phil. UCL.

CLOUT H.D. (1971) Agriculture. (Studies in contemporary Europe). London.

CLOUT H.D. (1972) The geography of post-war France, a social and economic approach. Oxf. Pergamon.

CLOUT H. (1974) 'Population changes in the Auvergne region Central France 1954-68'. Erdkunde 28, 246-259.

CLOUT H.D. (1975a) 'Structural Change in French Farming: the case of the Puy-de-Dome'. T.E.S.G. 66, 4, 234-245.

CLOUT H.D. (1975b) Timeless rural France. Geog. Mag. 151-155. In series 'France from Waterloo to World War II' No.3.

CLOUT H.D. (1977) Themes in the historical geography of France.

CLOUT H.D. and SUTTON K. (1969) 'The cadastre as a source for French rural studies'. Ag. Hist. 43, 215-23.

COBB R. (1972) Reactions to the French Revolution. London.

COLLEY D.G. (1975) 'A social change index'. Social Indicators Research 2, 1, 93-118.

COLLINS L. (1975) An introduction to Markov chain analysis. Concepts and Techniques in Modern Geography No. 1.

COLLINS L., DREWETT R. and FERGUSON R. (1974) 'Markov Models in Geography'. The Statistician 23, 314.

COMBE P. (1952) Niveau de vie et progrès technique en France depuis 1860. P.U.F.

COMPTON P.A. (1969) 'Internal migration and Pop lation Change in Hungary between 1959 and 1965'. T.I.B.G. 47, 111-130.

CONNOR D.M. (1964) 'Selective migration and residence'. International Migration 2, 2, 97-106.

COPPOCK J. (1960) 'The parish as a geographical-statistical unit'. T.E.S.G. 317-326.

CORBETT A. (1977) 'Out of the way: Man in a landscape'. New Society 12 May.

CORBIN A. (1971) 'Migrations temporaires et société rurale au XIX^{e} siècle: le cas du Limousin'. Revue Historique 246, 293-334.

CORDEY-HAYES M. and GLEAVE D. (1973) 'Migration movement and differential growth of city region in East and West'. Centre for Environmental Studies Research Paper 1.

COURGEAU D. (1970) Les champs migratories en France. INED Cahier no.58 P.U.F. Paris.

COURGEAU D. (1973) 'Migrants et migrations'. Population 28, 1, 95-129.

COWGILL D.O. (1961) 'Value assumptions in recent research on migration'. Sociological Quarterly 2, 4, 263-295.

COWGILL D.O. (1962-63) 'Transition theory as general population theory'. Soc. Forces 41, 270-279.

COX P.R. (1970) Demography 4th edn. C.U.P.

CRAIG J. (1970) 'Estimating the Age and Sex Structure of Net Migration for a Sub-Region. A Case Study: North and South Humberside, 1951-1961'. Reg. Studs. 4, 333-347.

CRIBIER F. (1961) 'De Venosc aux Deux-Alpes'. R.G.A. 293-319.

CRIBIER F. (1969) La grande migration d'été des citadins en France. Centre de Recherches et documentation cartographiques et Géographiques. Memoires et Documents.

CROZE M. (1956) 'Un instrument d'étude des migrations intérieures: les migrations d'électeurs'. Population 2.

CULLINGWORTH J.B. (1968) Housing and labour mobility: A preliminary report. O.E.C.D.

DAVID J. (1973) 'Les agriculteurs à double activité en Savoie et en Haute-Savoie: survivance ou renouveau'. Rev.Geog.Alp. LXI, 385-294.

DEMANGEON A. (1920) Le Déclin de l'Europe. Payot. Paris.

DEMANGEON A. and MARCO G. (1939) Documents pour servir à l'étude des etrangers dans l'agriculture française. Paris. Hermann. Conseil Universitaire de la Recherche Sociale.

DEMKO D. (1974) 'Cognition of Southern Ontario Cities in a Potential Migration context'. Econ. Geog. 50, 20-34.

DESPLANQUES G. (1975) Les migrations intercensitaires de 1962 à 1968. Collections de l'INSEE No.39. Demographie et emploi.

DICKINSON G.C. (1958) The nature of rural population movement - an analysis of 7 Yorkshire Parishes based on electoral returns from 1931-1954. Yorkshire bulletin of Economic & Social Research 10, 95-108.

DICKINSON R. (1963) 'Migration of workers in the Common Market countries'. Geog.Rev. 53, 3, 455-457.

DION R. (1934) Le val de Loire: Etude de Geographie regionale. Tours. Arrault et Cie.

DION R. (1959) Histoire de la vigne et du vin en France des origines au XIX^{e} siècle. Paris.

DOCUMENTATION FRANCAISE (1970) 'La politique de renovation rurale'. Notes et études documentaires No. 3708.

DOCUMENTATION FRANCAISE (1971) 'L'agriculture a temps partiel' Notes et études documentaires No. 3784.

DOCUMENTATION FRANCAISE (1971) Agriculture: rapports des commissions du 6^{e} plan 1971-1975. Paris.

DOCUMENTATION FRANCAISE (1972a) L'exode agricole: Étude socio-economique. Notes et études documentaires No. 3928.

DOCUMENTATION FRANCAISE (1972b) La Transformation du monde rural. Paris. Travaux et recherches de prospective No. 26.

DODD S.C. (1950) 'The interactance hypothesis: a gravity model fitting physical masses and human groups' Am. Soc. Rev. 15, 245-256.

DONNISON D.V. (1961) 'The movement of households in England'. J. Roy. Stat. Soc. Series A, 124, 60-80.

DOUBLET J. (1970) 'Les movements migratoires in Europe'. Revue Internationale des Sciences Sociales 17, 2, 304-17

DOYLE P. (1973) 'The use of automatic interaction detector and similar search procedures'. Operat. Res. Quart. 24, 465-467.

DREYFUS P. (1967) Grenoble, de César à l'Olympe. Grenoble.

DUBOSCQ P. (1972) 'La mobilité rurale en Aquitaine: essai d'analyse logique'. Espace Géographique 1.

DUBREUIL D. (1968) Grenoble ville-test. Paris.

DUBREUIL D. and NOARO J. (1971) 38 Isère. Guides Seuil. Paris.

DUMAND G. and GONTIER G. (1971) 'L'attitude des familles d'agriculteurs devant la migration professionelle: résultats d'une enquête'. Population, Numero Special. Famille, Marriage, Divorce, 37-66.

DUNCAN G.J. and NEWMAN S.J. (1976) 'Expected and actual residential mobility'. J. Am. Inst. Planning 42.

DUNCAN O.D. (1963) 'The theory and consequences of mobility of farm population', in Spengler J.J. and Duncan O.D. (eds.). Population Theory and Policy: Selected Readings. Free Press, Glencoe.

DYER C. (1978) Population and Society in 20th Century France. Hodder and Stoughton. London.

EDWARDS J.A. (1973) 'Rural migration in England and Wales'. The Planner 59, 10, 450-452.

ELKINS T.H. (1973) The urban explosion. Macmillan.

ESTIENNE P. (1958) 'L'émigration, contemporaire dans la montagne auvergnate'. R.G.A. 46, 463-494.

ESTIENNE P. (1963) Les villes du Massif Central. Clermont-Ferrand.

ESTIENNE P. (1978) 'Les montagnes françaises et l'axe Rhône-Rhin 1978'. Tome 3 in La France. Paris. Masson.

EVANS I.S., CATTERAL J. and RHIND D.W. (1975) Spepcific transformations are necessary . CRU WP2 Dept. of Geog. Univ. of Durham.

F.A.O. (1961) Rural Problems in the Alpine Region.

FAIDUTTI-RUDOLPH A. (1962) 'L'evolution de l'immigration en France 1946-1960. Information géographique.

FAUCHER A. (1957) Chambéry, essai d'analyse des structures démographiques et professionnelles. P.E.S. Grenoble.

FAUCHER D. (1927) Plaines et bassins du Rhône moyen. Paris.

FIELDING A. (1965) Recent changes in the distribution of population and employment in France and their relationship to policies for regional development. Unpub. Ph.D.Thesis. London.

FIELDING A.J. (1966) 'Internal migration and regional economic growth - a case study of France'. Urban Studies 3, 200-214.

FIELDING A.J. (1971) Internal migration in England and Wales. CES UWP 14.

FIELDING A.J. (1975) 'Internal Migration in Western Europe'. From People on the Move eds. L.A. Kosinski and R. Mansell Prothero. Methuen, London, 16, 237-254.

FORREST A. (1973) 'The condition of the poor in revolutionary Bordeaux'. Past and Present 59, 147-77.

FORSYTH D.J.C. and MERCER G. (1973) 'The Emigration of Graduates from Scotland, 1966-1969'. Reg. Studs. 7, 95-107.

FOUND W.C. (1971) A theoretical approach to rural land-use patterns. Edward Arnold, London.

FOUND W.C. (1976) Environment, migration and the planning of rural resources. Part 2: interregional migration. Council of Planning Librarians, Exchange bibliography.

FRANKLIN S.H. (1969) The European peasantry. The Final Phase. London.

FRANKLIN S.H. (1971) Rural Societies. Studies in Contemporary Europe Series, Macmillan, London.

FRIEDLANDER D. (1969) 'Demographic Responses & Population Change'. Demography 6, 359-381.

FRIEDLANDER D. and ROSHIER R.J. (1966a) 'A study of internal migration in England and Wales: part I'. Population Studies 19, 239-279.

FRIEDLANDER D. and ROSHIER R.J. (1966b) 'A study of internal migration in England and Wales. Pop. Studs. Part II 20(1), 45-59.

GANGULI B.N. (1964) 'Population and migration factors in rural development' pp 225-245 in Proceedings of the International Conference of Agricultural Economists (12th).

GARDELLE C. (1973) 'La vie pastorale dans les Alpes françaises'. R.G.A. LXI, 449-461.

GARDELLE C. (1978) 'Evolution récente de la transhumance ovine dans les Alpes de 1964 à 1976'. R.G.A. LXVI, 2, 211-212.

GARNIER M. and HAZELRIGG L.F. (1970) 'Father-to-Son Occupational Mobility in France: Evidence from the 1960s'. A.J.S. 80, 2, 478-502.

GARRISON W.L. and MABLE F. (1963) 'A Factor-Analytic Study of the Connectivity of a Transport Network'. Rep.Sci. Assoc. Papers XII, 231-238.

GASPARIN Comte de (1843) Cours d'agriculture. Paris.

GASSON R. (1966) The Influence of Urbanization in Farm Ownership & Practice. Dept. Ag. Economics, Wye College.

GASSON R. (1968) 'Occupations chosen by the sons of farmers'. J.Ag.Econ. 19, 3, 317-326.

GASSON R. (1969a) 'Occupational immobility of small farmers'. Farm Economics Branch, Occasional Paper No.13, Cambridge University.

GASSON R. (1969b) 'The choice of farming as an occupation'. Sociologia Ruralis 9(2) 146-166.

GASSON R. (1973) 'Industry and migration of farm workers'. Oxford Agrarian Studies 2(2), 141-160.

GAUTIER E. and HENRY L. (1958) La population de Crulai, paroisse normande: étude historique. I.N.E.D. Travaux et Documents 33. Paris.

GELMAN M. (1963) 'Structure démographique et origine de la population industrielle grenobloise'. R.G.A. pp 109-143.

GEORGE P. (1967a) La France. Paris P.U.F.

GEORGE P. (1967b) Géographie de la population. Paris. P.U.F.

GEORGE P. (1967c) Précis de géographie rurale. 2nd edn. Paris. P.U.F.

GERVAIS M. (1976) Histoire de la France rurale Vol. 4: La Fin de la France paysanne de 1914 a nos jours, sous la direction de Georges Duby & Armand Wallon. Seuil.

GIRARD A. and BASTIDE H. (1960) 'Les problèmes démographiques devant l'opinion'. Population No.2.

GIRARD A. and BASTIDE H. (1974) 'Mobilité de la population et motivations des personnes: une enquête auprès du public'. Population, 579-607.

GIRARD A. et al (1970) 'Geographical mobility and urban concentration in France: a study in the Provinces', in James C.J. (ed.) Readings in the Sociology of Migration. Pergamon, Oxford, 203-253.

GIRARD A., BASTIDE H. and POURCHER G. (1964) 'Mobilité géographique et concentration urbaine'. Population 1964, 227-287.

GIRARD A. and ZUCKER E. (1968) 'La conjonctive démographique: regulation des naissances, famille et natalité. Une enquête auprès du public'. Population 2, 225-264.

GLASS DV. (1967) Population Policies and Movements in Europe.

GLASS D.V. and EVERSLEY D. (1965) Population in History.

GLASS D.V. and REVELLE R. (1972) Population and Social Change.

GLAYMAN G. (1967) 50 millions de Grenoblois. Paris.

GLEAVE D. and HYMAN G. (1974) A reasonable model of migration. C.E.S. WN 403.

GODDARD J.B. (1970) 'Functional Regions within the City Centre: a study by Factor Analysis of Taxi Flows in Central London'. T.LB.G. 49, 161-182.

GOLDNER W. (1971) 'The Lowry Model Meritage'. J.Am.Inst.Plan. 37, 2, 100-110.

GOLDSTEIN S. and MAYER K.B. (1965) 'Impact of migration on the socio-economic structure of cities and suburbs'. Sociology and Social Research 50, 5-23.

GOREUX L-M (1956) 'Les migrations agricoles en France depuis un siècle et leur relation avec certains facteurs économiques'. Paris Etudes et Conjective 4, 327-376.

GOTTMAN J. (1976) 'Paris Transformed'. Review of Bastie: 20 ans de Transformations de Paris. Geog.Jour. 142, 1, 132-134.

GOUBERT P. (1965) 'Legitimate fertility and infant mortality in France during the eighteenth century: a comparison'. In Glass and Revelle (eds.) Population and Social Change.

GOULD P.R. (1967) 'On the geographical interpretation of eigenvalues'. T.I.B.G. 43, 53-86.

GRAHAM P. (1975) In the cafes of Paris. New Society 25th Sept.

GRAVIER J. (1948) Paris et le désert français. Paris. Le Portulan.

GRAVIER J. (1972) Paris et le désert français en 1972.

GRIGG D. (1966) 'The geography of farm size: a preliminary survey'. E.G. (3) 208-235.

GRIGGS J.A. and MATHER P.M. (1975) 'Factional ecology and factor invariance: an investigation'. Econ.Geog. 51, 366-382.

GUILLAUME P. and POUSSOU J.P. (1970) Démographie historique. Paris. Librarie Armand-Colin.

HADJIFOTIOU N. (1972) 'The analysis of migration between standard metropolitan labour market areas in England and Wales'. Housing and Labour Mobility Survey Working Paper No. 4 Department of Geography, University College, London.

HAGERSTRAND T. (1947) The movement of a rural population. Swedish Geog. Yearbook, Lund.

HAGERSTRAND T. (1951) 'Migration and the Growth of Culture Regions'. Lund Studies in Geography Series B III, 33-36.

HAGERSTRAND T. (1957) 'Migration and Area: Survey of a Sample of Swedish Migration Fields and Hypothetical Considerations on their genesis', in Migration in Sweden: A Symposium. Lund Studies in Geography Series B No.13. Lund Department of Geography, The Royal University of Lund.

HAGERSTRAND T. (1962a) 'Geographic measurement of migration' - pp 61-84 in Human Displacements ed. Dr. Jean Sutter.

HAGERSTRAND T. (1962b) 'The propagation of Innovation Waves' in Readings in Cultural Geography eds. Wagner P.L. and Mikesell M.W. University of Chicago Press, Chicago & London pp.355-368.

HAGERSTRAND T. (1966) 'Aspects of the spatial structure of social communication and the diffusion of information'. D.P.R.S.A. 16, 27-42.

HAMILTON H.C. (1951) 'Population Pressure and other factors affecting net Rural-Urban migration'. Soc.Forces 30.

HAMMOND R. and McCULLAGH P. (1978) Quantitative techniques in geography: an introduction. Oxford, Clarendon Press.

HANSEN N.M. (1968) French Regional Planning. Edinburgh University Press.

HARRIS A.I. (1966) U.K. Social Survey. Labour Mobility in Great Britain 1953-63. H.M.S.O.

HART R.A. (1973) 'Economic Expectations and the Decision to Migrate: An analysis by socio-economic group'. Reg.Studs.7, 271-285. Pergamon.

HARVEY D. (1969) Explanation in Geography. London. Edward Arnold.

HATT J.J. (1966) Histoire de la Gaule romaine. Paris.

HAWLEY A.H. (1950) Human ecology - a theory of community structure. N.Y. Ronald Press.

HAYNES R.M. (1974) 'Application of Exponential Distance Decay to Human and Animal Activities'. Geografiska Annaler 56B, 2, 90-104.

HEALD G.I. (1972) 'The application of the A.I.D. programme and multiple regression techniques to the assessment of store performance and site selection'. Operat.Res.Quart. 23, 445-457.

HERBIN R. and PEBEREAU A. (1953) Le Cadastre français. Paris.

HERBST P.G. (1964) Organisational commitment: a decision process model. Acta Sociologica 7, 34-45.

HILDEBRANDT R. (1974a) Regional Identification and the Demarcation of Boundaries: The concept of the migration region. Univ. of Glasgow Discussion Papers in Social Research No. 2.

HILDEBRANDT R. (1974b) Some Internal Migration Patterns in mid-nineteenth century Scotland. Univ. of Glasgow - Discussion Papers in Social Research No. 3.

HIRST M.A. (1976) 'A markovian analysis of inter-regional migration in Uganda'. Geog. Annaler. 58B(2), 79-94.

HOHENBURG P. (1974) 'Migrations et fluctuations démographiques dans la France rurale 1936-1901'. Annales économie, société, civilisation 29(2), 461-497.

HOLSMAN A.J. (1975) 'Interstate interaction patterns in Australia'. Aust.Geog.Studs. 13, 1, 41-61.

HOUSE J.W. (1954) Population Movements and the landscape since the early 19th century. Dept. of Geog. King's College, Newcastle-upon-Tyne. Research Series No.1.

HOUSE J.W. and KNIGHT E.M. (1965) Migrants of N.E.England 1951-61: Character Age and Sex. Univ. of Newcastle-upon-Tyne.

HOUSE J.W. and KNNIGHT E.M. (1966) People on the move - The South Tyne in the sixties. Papers on Migration and Mobility in N.E. England No.3.

HOUSSIAUX J. (1958) 'Distortion de structures en France 1789-1914'. Revue Economique No.5.

HOUSTON J.M. (1953) A social geography of Europe. Duckworth, London.

HUBER M., BUNCE H. and BOVERAT F. (1943) La population en France. Paris. Hachette.

HYMAN G. and GLEAVE D. (1976) 'A reasonable theory of migration'. Centre for Environmental Studies R.P.22, London.

I.B.G. STUDY GROUP IN QUANTITATIVE METHODS (1973) Multivariate Analysis in Geography. Working Paper Set No.1.

IMBERT G. (1959) A la découverte d'une population. Étude démographique des Alpes-Maritimes. Aix-en-Provence. Centre regional de documentation pedagogique.

JACKSON J.A. (1969) Migration. C.U.P.

JANSEN C. (1968) Social aspects of internal migration. Bath University Press. 2 vols.

JANSEN C. (1969) 'Some sociological aspects of migration' in J.A.Jackson (ed.) Migration. C.U.P.

JANSEN C.J. (ed.) (1970) Readings in the Sociology of Migration. Pergamon.

JOHNSON G.E. (1971) 'The structure of rural-urban migration models'. East Af.Econ. Rev. 3(1), 21-28.

JOHNSON J., SALT J. and WOOD P. (1974) Housing and migration of labour in England and Wales. Saxon House. London.

JOHNSTON R.J. (1966) 'Components of Rural Population Change'. T.P.R. 36, 279-293.

JOHNSTON R.J. (1969) 'Population change in an urban system - the examples of the Republic of Ireland and Scotland'. S.G.M. 85, 2, 132-140.

JOHNSTON R.J. (1971) 'Resistance to migration and the mover/stayer dichotomy: aspects of kinship and population stability in an English rural area'. Geografiska Annaler 53B, (1), 16-27.

JONES H.R. (1965) 'A study of rural migration in Central Wales'. T.I.B.G. 37, 31-45.

JOUANNY J. (1931) Le tissage de la soie dans le bas Dauphiné. Grenoble.

JUDT T. (1976) 'A society in stagnation'. Geog.Mag pp 236-240 'France from Waterloo to World War II' No.4.

JULLIAN R. (1908-26) Histoire de la Gaule. Paris. 8 vols.

JULLIAN R. (1926) 'La foire de Beaucroissant'. R.G.A. pp 601-616.

JUILLARD E. (1974) Histoire de la France rurale Vol. 3: Apogée et crise de la civilisation paysanne de 1789-1914, sous la direction de Georges Duby & Armand Wallon. Seuil.

KANT E. (1962) 'Classification and Problems of Migrations' in Readings in Cultural Geography ed. P.L.Wagner and M.W.Mikesell. Chicago. 342-354.

KARIEL H.G. (1963) 'Selected factors areally associated with population growth due to net migration'. A.A.A.G. 53.

KASPARIAN R. (1977) 'Approximation du Calendrierdes migrations multiples par un modèle stochastique'. Population 4-5, 867-887.

KASS G.V. (1975) 'Significance Testing in Automatic Interaction Detection (A.I.D.)' Appl.Statist. 24, 2, 178-189.

KAYSER B. (1971) Manpower movements and labour markets. O.E.C.D.

KELLEY A.C. and WEISS L.W. (1969) 'Markov processes and economic analysis'. Econometrica 37, 280-97.

KENNETT S. (1975) A classification of the components of Intra Urban and Inter urban Population Change in England and Wales between 1961-1971. L.S.E. Graduate School of Geography Discussion Paper No.54.

KERRIDGE E. (1967) The agricultural revolution. O.U.P.

KEOWN P.A. (1971) 'Stepwise migration and the career cycle'. N.Z.Geographer 27, 175-184.

KLAASEN J.A. (1973) Migration Policy in Europe.

KLATZMANN J. (1959) 'Les lecons du recemement de l'agriculture'. Etudes et conjunctive.

KLATZMANN J. (1961) 'Le revenu de l'agriculture pour la campagne 1960-61'. Etudes et Conjonctive.

KNOX P.L. and SCARTH A. (1977) 'The quality of life in France'. Geography 62, (1), 1-16.

KOSINSKI L.A. (1967) The population of Europe. Longman Geography Paperbacks.

KULLDORFF G. (1955) 'Migration Probabilities'. Lund Studies in Geography Series B Human Geog. No.14.

LABASSE J. (1955) Les capitaux et la région. Essai sur le commerce et la circulation des capitaux dans la région Lyonnaise. Lyon.

LABASSE J. (1966) L'organisation de l'espace, éléments de géographie volontaire. Paris. Herrmann.

LABASSE J. and LAFERMÈVRE M. (1964) La région Lyonnaise. France de Demain. P.U.F.

LABOURNE M. (1879) La France agricole. Paris.

LABOURNE M. (1950) Aspects de l'évolution économique et sociale de la France et du Royaume-Uni 1815-1880.

LADINSKY J. (1967) 'Occupational determinants of geographic mobility among professional workers'. Am.Soc.Rev. 32, 253-64.

LADURIE LE ROY E. (1966) The peasants of Languedoc. Translated by John Day. University of Illinois Press.

LAFERRÈRE M. (1970) 'Les fonctions tertiares d'une grande ville de province: Lyon'. Grandes Villes et Petites Villes. C.N.R.S.

LAMARTINE YATES P. (1960) Food, land and manpower in Western Europe. Macmillan, London.

LAND K. (1959) 'Duration of residence and prospective migration'. Demography 4, 293-309.

LANDES D. (1969) The Unbound Prometheus: Technological Change and Industrial development in Western Europe from 1750 to the present. London.

LANNES X. (1953) L'immigration en France depuis 1945. La Haye. M. Nijhoff.

LARRÈRE C. (1973) 'L'analyse physiocratique des rapports entre les villes et la campagne'. Etudes Rurales 49-50, 42-68.

LATOUCHE R. (1956) Histoire du Dauphine (bibliographie). Revue Historique 175.

LAURENT J. (1948) Grenoble hier et audjoud'hui. Grenoble.

LAVERGNE L. DE (1860) Economie rurale de la France.

LEAMAN J.H. and CONKLING E.C. (1975) 'Transport Change and Agricultural Specialization'. A.A.A.G. 65, 3.

LEE E.S. (1966) 'A theory of migration'. Demography 3, 47-57.

LEON P. (1954) La naissance de la grande industrie en Dauphiné (fin du XVIIe siècle - 1869). Paris.

LEON P. (1963) Les Dolle et les Raby. Paris.

LEPAPE L. (1970) 'Etude de la population des retraités et des personnes âgées inactives dans des villes touristiques littorales'. Bulletin de l'Association de Géographes Français 381, 123-133.

LESLIE G.R. and RICHARDSON A.H. (1961) 'Life-cycle, career pattern and the decision to move'. Am.Soc.Rev. 6, 894-902.

LEVASSEUR J. (1889-92) La population française, 3 vols. Paris.

LEVI J.F.S. (1973) 'Migration from the land and urban unemployment in Sierra Leone'. Oxf.Bull. Econ. and Stat35(4), 309-326.

LEVI STRAUSS L. and MENDRAS H. (1974) 'Rural Studies in France'. Journal of Peasant Studies 1, (3), 363-378.

LINDSAY I. and BARR M. (1972) 'Two stachastic approaches to migration: comparison of Monte Carlo simulation and Markov chain models'. Geog. Annaler 54B, 56-67.

LITTLE R.L. (1975) 'Correlational Change Analysis: Reliability and Metric Issues'. Social Science Research 4, 385-401.

LIVI-BACCI M. (1973) 'Population Policy in Western Europe'. Population Studies 28, 2. 191-204.

LOCOH T. (1970) 'La Population des ménages agricoles. Emigration et viellisement. Résultats depuis 1962 et perspectives jusqu'en 1975'. Population 25, 3, 497-516.

LODHI A.Q. and TILLY C. (1973) 'Urbanization, Crime, and Collective Violence in 19th Century France'. A.J.S. 79, 2, 296-318.

LONG L.H. (1974) 'Poverty status and receipt of welfare among migrants and non-migrants in large cities'. Am.Soc.Rev. 39, 46-56.

LOVGREN E. (1956) 'The geographical mobility of labour - a study of migrations'. Geografiska Annaler 38, 344-94.

LOWENTHAL D. and LAMBROS C. (1962) 'Emigration and Depopulation: Some neglected aspects of Population Geography'. Geog.Rev. LII, 195-210.

LOWRY I.S. (1966) Migration and metropolitan growth. Two analytical models. Inst.Govt. & Public Affairs, Univ. of Calif.

MABOGUNJE A.L. (1970) 'Systems Approach to a Theory of Rural-Urban Migration'. Geog. Anal. 2, 1-18.

McGRONE G. (1969) Regional Policy in Britain. London. Allen & Unwin.

McDONALD J.R. (1969) 'Contemporary patterns of internal migration in France'. Michigan Academician Lansing 101-111. Paper of the Michigan Academy of Science, Arts & Letters Vol. I 3/4.

McDONALD J.R. (1972) 'Internal Migration and Changing Patterns of regional economic development: the case of France'. J.Geog. LXXI, 9, 542-549.

McDONALD J.R. and McDONALD L.D. (1964) 'Chain migration, ethnic neighbourhood formation and social network'. Millbank Memorial Fund Quarterly 42, 82-97.

McGEE T.G. (1973) 'Peasants in the Cities: a paradox, a paradox, a most ingenious paradox'. Human Organization 32, 2, 135-142.

MALABOUCHE G. (1976) 'La démographie et l'emploi; pendant la VIème et la VIIème Plans dans Rhône-Alpes'. I.N.S.E.E. Lyon Études et Synthesès.

MARBLE D.F. and NYSTUEN J.D. (1963) An approach to the direct measurement of community mean information fields. P.P.R.S.A. II, 99-109.

de MARLIAVE C. (1955) Les Mines d'anthracite de la Mure. Grenoble.

MARRIOTT McK. (1954) 'La modernisation de l'agriculture dans les régions rurales sous-dévellopés'. Chronique sociale de France II, 123-134.

MARTIN P. (1971) Favorables a la région, les migrations de 1962 a 1969, ont-elles accusé ses disparités internes?' I.N.S.E.E. Lyon. Études et Synthèses.

MARTIN P. (1971) 'Rhône-Alpes. Région d'Immigration'. I.N.S.E.E. Lyon. Études et Synthèses.

MARTINON D. (1974) 'Les paysans-mineurs et le plateau Mathysine'. R.G.A. LXII.

de MAUROY H. (1976) 'La présence des étrangers dans la région Rhône-Alpes de 1967 à 1975'. I.N.S.E.E. Études et Synthèses. Points d'Appui No. 7.

de MAUROY H. (1977) 'Très foible croissance de la population étrangère dans Rhône-Alpes en 1976'. I.N.S.E.E. Dr. Reg. de Lyon. Études et Synthèses.

MAYEUR J.M. (1973) Les débuts de la troisième république. Paris.

MÉJEAN P. (1949) Le Bas-Dauphiné. Grenoble doct.

MENDRAS H. (1953) Études de sociologie rurale. Novis & Virgin. Paris.

MENDRAS H. (1958) Les paysans et la modernisation de l'agriculture. Travaux, Centre d'études social. Paris.

MENDRAS H. (1970) The vanishing peasant, innovation and change in French agriculture. (Tr. J.Lerner). M.I.T. Studies in compar. pol. Cambridge.

MERLIN P. (1971) L'exode Rural suivi de deux études sur les migrations par Robert Hérin et Robert Nadot. Institut National d'études démographiques. Presses Universitaires de France.

MICHEL C. (1971) 'Les migrations interregionales de la Bretagne 1962-68'. Norois 70, 277-293.

MICHOUD M-L-T. (1962) 'La structure démographique des quartiers de Grenoble en 1954'. R.G.A. p.446-455.

MICHOUD M-L-T. (1965) Mouvements et structures de la population Grenoblois, 1926-1962. These. Grenoble.

MINISTÈRE de l'AGRICULTURE (FRANCE). (1937) L'agriculture de la France. Paris.

MINISTÈRE de l'AGRICULTURE. (1937) Monographie Agricole du departément du Morbihan. Annexe a l'enquête de 1929. Imp. A Chaumeron Vannes.

MINISTÈRE de l'AGRICULTURE. (1937) Monographie Agricole du departément du Vendée. Annexe a l'enquête de 1929. Paris.

MOORE E.G. (1970) 'Some spatial properties of urban contact fields'. Geog. Analysis 2, 376-386.

MORÉAU de JONNES. (1848) Statisque de l'agriculture en France. Guillaumin.

MOREL A. (1972) 'L'espace social d'un village picard'. Etudes Rurales 62-80.

MORGAN J.A. and SONQUIST J.N. (1963). 'Problems in the analysis of survey data: and a proposal'. J. Amer.Statist.Ass. 58, 415-434.

MORGAN S. (Scottish Development Department) (1973). The characteristics of immigrant flows to the counties of Scotland from the rest of Great Britain (1961-1966). Scot. Devt. Dept. Central Research Unit Paper No. 8.

MORGAN W.B. and MUNTON R.J.C. (1971) Agricultural Geography. Methuen. The Field of GeographySeries. General eds. W.B. Morgan & J.C.Pugh.

MORRILL R.L. (1962) 'The development of spatial distribution of towns in Sweden: An Historical Predictive Approach'. A.A.A.G. 53, 1-16.

MORRILL R.L. (1963) 'The distribution of migration distances'. Papers and Proceedings of the Regional Science Assocn. Vol. II, 75-84.

MORRILL R.L. (1965) 'Migration and the Spread and Growth of Urban Settlement'. Lund Studies in Geog. Ser.B. No. 26. Lund Sweden.

MORRILL R.L. and PITTS F.R. (1967) 'Marriage, migration and the MIF: a study in uniqueness and generality'. A.A.A.G. 57, 2, 401-422.

MORRISON P.A. (1967) 'Duration of residence and prospective migration: the evaluation of a stachastic model'. Demography 4, 553-561.

MORRISON P.A. (1971) 'Chronic movers and the future re-distribution of population: a longitudinal analysis'. Demography 8, 171-184.

MOSELEY M.J. (1973) 'The Impact of Growth Centres in Rural Regions - I. An analysis of spatial 'patterns' in Brittany'. Reg.Studs. 7, 57-75.

MOSER C.A. (1958) Survey methods in social investigation. Heinemann.

MUET P.A. (1970) 'Les mouvements interrégionaux de population et le passage de l'emploi agricole a l'emploi non-agricole'. Economie Rurale 84, 69-82.

MUSGROVE F. (1963) The migratory elite. London. Heinemann.

MYERS G.C., McGINNIS R. and MASNICK G. (1967) 'The duration of residence approach to a dynamic stachastic model of internal migration: a test of the axiom of cumulative inertia'. Eugenics Quarterly 14, 2, 121-126.

NADAUD M. (1895) Mémoires de Léonard, ancien garçon maçons bourganeuf. Duboueix.

NADOT R. (1970) Évolution de la mortalité infantile endogène en France dans la deuxième moitié du XIX^{e} siècle'. Population 1, 49-58.

NADOT R. (1971) 'L'immigration étrangère depuis la guerre. Cahier de 'Travaux et Documents' de l'I.N.E.D. No. 59.

NALSON J.S. (1968) Mobility of farm families. Manchester University Press.

NEWMAN S. (1975) 'Objective and Subjective Determinants of Prospective Residential Mobility'. Social Indicators Research 2, 53-63.

NG R. (1969) 'Internal Migration Regions in Scotland'. Geog. Annaler 52B, 139-147.

NIZARD A. and PRIOUX F. (1975) 'La mortalité départementale en France'. Population 4-5, 781-824.

NOIN D. (1973) Géographie démographique de la France. Paris, Presses Universitaires de France & Publications de l'Université de Rouen.

NYSTUEN J.D. and DACEY M.F. (1961) 'A graph theory interpretation of nodal regions'. Papers and Proc.Reg.Sci.Assoc. 7, 29-42.

O.E.C.D. (1972) Structural Reform Measures in Agriculture. Paris. (H.M.S.O.)

O.E.E.C. (1959) The small family farm: a European problem. Paris.

OBSERVATOIRE ECONOMIQUE RHONE-ALPES (1977) 'Le solde naturel dans la région Rhône-Alpes par commune 1962-1968 et 1968-1975'. I.N.S.E.E. Études et synthèses. Lyon.

OGDEN P.E. (1973) Marriage Patterns and Population Mobility: A study in rural France. School of Geography. University of Oxford. Res. Paper No. 7.

OGDEN P.E. (1974) 'Expression Spatiale des Contacts Humains et Changement de la Societe: l'exemple de l'Ardeche 1860-1970'. Rev.Geog. Lyon. XLIX, 3, 191-209.

OGDEN P.E. (1975) 'Empty France'. Geog.Mag. 'France from Waterloo to World War II. pp.94-97.

OGDEN P.E. (1977) Foreigners in Paris: residential segretation in the nineteenth and twentieth centuries. Dept. of Geog. Q.M.C. Univ. of London. O.P.11. London.

OGDEN P.E. and LEE R. (eds.) (1976) Economy and society in the E.E.C. Farnborough Hants. Saxon House.

OGDEN P.E. and WINCHESTER S.W.C. (1975) 'The residential segregation of provincial migrants in Paris in 1911'. T.I.B.G. 65, 29-44.

OLSSON G. (1965) 'Distance and Human Interaction: A Migration Study'. Geografiska Anneler 47B, 3-43.

OLSSON G. (1965b) Distance and Human Interaction: A review and bibliography. Reg. Sci. Research Institute.

OPENSHAW S. and GILLARD A. (1976) 'An empirical study of the effects of various operational decisions on a spatial classification of census enumeration district data'. Paper presented to I.B.G. Population and Quantitative Study Groups, September meeting. Unpub.

O.R.E.A.M. Lyon-St.Etienne. (1970) 'Les migrations définitives dans la région Rhône-Alpes'. Grandes Villes et Petites Villes C.N.R.S. pp 137-156.

ORR L. (1972) 'The dependence of transition proportions in the education system on observed social factors and school characteristics'. J.R.Statist.Soc. A 135, 74-95.

PAILHÉ J. (1972) 'La structure des emplois en France en 1968'. Norois, 81-101.

PAILLAT P. (1973) 'Conditions de vie et besoins des ruraux agés non agricole: presentation d'un cahier de l'INED'. Population 28, (6), 1125-28.

PAILLAT P. (1976) 'La vieillessement de la France rurale: intensité, evolution, diffusion et typologie'. Population 31(6) 1147-1188.

PALM R. (1973) 'Factorial ecology and the community of outlook'. A.A.A.G. 63, (3), 341-46.

PARE S. (1974) 'Les disparités régionales de l'informatique française'. Annaler de Geographie. 173-189.

PAUTARD J. (1965) Les disparités régionales dans la croissance de l'agriculture française. Gauthie-Villars, Paris.

PEACH G.C.R. (1968) West Indian Migration to Britain: a social geography. O.U.P. for I.R.R., London

PERRY P.J. (1969) 'Working-class isolation and Mobility in Rural Dorset 1837-1936: A study of marriage distances'. T.I.B.G. 46, 121-141.

PETERSEN W. (1958) 'A general typology of migration'. Am.Soc.Rev. 23, 256-266.

PEUCHET J. (1805) Statistique elementaire de la France. Gilbert.

PHILIPPONEAU (1957) Le probleme Breton et de programme d'action regionale. Un probleme type de la politique de developpement des economies regionales. A. Colin. Paris.

PHILLIPS A.D.M. and CLOUT H.D. (1970) 'Underdraining in France during the second half of the nineteenth century'. T.I.B.G. 71-94.

PINCHEMEL (1969) France: A geographical survey. London. G.Bell & Sons.

PITIÉ J. (1971) EXODE RURALE et migrations intérieures en France. L'example de la Vienne et du Poitou-Charentes. Norois.

PITTENGER D.B. (1974) 'A Typology of age-specific net migration rate distributions'. J.Am.Inst.Plan. 40, 4, 278-283.

PLESSIS-FRAISSARD M. (1975) 'Age, length of residence and the probability of migration'. University of Leeds Department of Geography Working Paper 107.

POINARD M. (1972) 'Les Portugais dans le département du Rhône entre 1960 et 1970'. Revue de Géographie de Lyon 47, (1), 35-58.

PORTER R. (1956) 'Approach to migration through its mechanism'. Geog. Ann. 38, 317-343.

POURCHER G. (1964) Le peuplement de Paris. 1964 Presses Universitaires de France, Paris.

POURCHER G. (1966) 'Un essai d'analyse par cohorte de la mobilité géographique et professionelle'. Population 2, 357-378.

POURCHER G. (1970) 'The growing population of Paris'. pp.179-202 in Jansen C.J. (ed.) Readings in the Sociology of Migration. Pergamon.

POUSSON P. (1970) 'Les mouvement migratoires en France et a partir de la France de la fin du XV^{e} siècle au debut du XIX^{e} siècle; Approaches par une synthese'. Annales de Demographie Historique, 11-78.

PRESSAT R. (1957) 'La population agricole en France. Structure actuelle et previsions jusqu'en 1966'. Population No. 1.

PRESSAT R. (1970) 'La conjonctive démographique: L'Europe; données statistiques'. Population 28, (b) 1155-57.

PRESSAT R. (1972) Demographic analysis. Trans.Judah Matras. Arnold.

PRICE O. (1950) 'Some socio-economic factors in Internal Migration'. Social Forces 29, 409-415.

PRIEUR J. (1968) La Province remaine des Alpes Cottiennes. Lyon.

PRIVAT E. (Ed.) (1973) Histoire du Dauphiné. Toulouse.

PROST A. (1966) 'LIimmigration en France depuis cent ans'. Esprit 34, 348, 536.

PROTHERO R.M. (1965) Migrants and malaria. London. Longmans.

PUMAIN D., ROBIC M-C and PINCHEMEL P. (1972) 'Croissance urbaine et échanges migratoires: contribution méthologique'. R.G.A. 60, 2, 203-224.

PRYOR R.J. (1971) Internal migration and urbanisation. Monograph series Geog.Dept. James Cook University. No. 2.

QUINTIN J. and TOMAS M.E. (1971) Les Villes du Massif Central. Centre d'Études Foréziennes, Saint-Etienne.

RAMBAUD P. (1969) Société Rurale et Urbanisation. Éditions du Seuil. Paris.

RAVENSTEIN E.G. (1885) 'The laws of migration'. Journal of the Royal Statistical Society 98, 167-227. Reprinted as No.5-482 in the 'Bobbs-Merrill series in the Social Sciences'. Bobbs-Merrill, Indianapolis.

RAVENSTEIN E.G. (1889) 'The laws of migration'. Journal of the Royal Statistical Society 52, 241-301. Reprinted as No.5-483 in the 'Bobbs-Merrill series in the Social Sciences'. Bobbs-Merrill, New York.

REDFIELD R. (1950) A village that chose progress. Chicago Univ. of Chicago Press.

REES P.H. (1977) 'The measurement of migration, from census data and other sources'. Environment and Planning A, 9, 247-272.

REES P.H. and WILSON A.G. (1977) Spatial Population Analysis. Edward Arnold, London.

REINHARD M.R., ARMENGAUD A. and DUPAQUIER J. (1968) Histoire générale de la population mondiale. Paris. Eds.Montchrestien.

REY E. (1908) L'agriculture progressive dans le Lot. Cahors.

RICHARDOT J-P. (1971) Rhône-Alpes. Clef pour l'Europe. Pub. Robert Laffont. Régions d'Europe.

RICHARDSON H.W. (1969) Regional Economics: Location Theory, Urban Structure and Social Change. Weidenfeld and Nicholson.

RIDDELL J.B. (1969) A more realistic derivation of regression parameters. Pennsylvania, Dept. of Geog. Papers in Geog. 2.

RIDDELL J.B. and HARVEY M.E. (1972) 'The urban system in the Migration Process: An evaluation of step-wise migration in Sierra Leone'. Econ. Geog. XLVIII, 270-283.

RIDER R.V. and BADGER G.F. (1943) 'Family studies in the eastern health district: a consideration of issues involved in determining migration rate for families'. Human Biology 15, 2, 101-126.

ROGERS A. (1965) An analysis of interregional migration in California. Centre for Planning and Development Research, Institute of Urban and Regional Development, University of California, Berkeley.

ROGERS A. (1966) 'Matrix methods of population analysis'. A.I.P. Journal 40-44.

ROGERS T.W. (1969) 'Migration probabilities on the basis of prior migratory behaviour: a methodological note'. International Migration 7, 1/2, 13-21.

ROSE A.M. (1963) 'Distance of migration and socio-economic status of migrants'. Am.Soc.Rev. 23, 4, 420-423.

ROSE A.M. (1969) Migrants in Europe: problems of acceptance and adjustment. Minnesota U.P.

ROSEMAN C.C. (1971) 'Migration as a spatial & temporal process'. A.A.A.G. 61, (3), 589-598.

ROSS H.C. (1962) 'Reasons for moves to and from a central city area'. Soc. Forces 40, 261-263.

ROSS J.A. and BANG S. (1966) 'The A.I.D. computer program, used to predict adoption of family planning in Koyang'. Popul.Studies 20, 61-75.

ROSSI P.H. (1955) Why families move: a study in the social psychology of urban residential mobility. Glencoe Illinois Free Press.

ROSTOW W.W. (1960) The Stages of Economic Growth. Cambridge,Eng.

ROUSSIN M. (1978) 'Crest: un siècle d'évolution démographique'. R.G.A. LXVI, 2, 115-135.

ROWNTREE J.A. (1957) Internal migration - a study of frequency of movement of migrants. Studies on Medical and Population Subjects No.11. London. HMSO.

RUMMELL R.J. (1970) Applied Factor Analysis. Northwestern University Press.

RUSHTON G. (1971) 'Behavioural correlates of Urban Spatial Structure'. Econ.Geog.

SALT J. and CLOUT H. (eds.) (1976) Migration in Post-war Europe: geographical essays. Oxford University Press.

SAMUEL R. (ed.) (1975) 'Village Life & Labour'. Routledge & Kegan Paul.

SAUVY A. (1969) General Theory of Population. Weidenfeld & Nicholson.

SAVILLE J. (1957) Rural Repopulation in England & Wales 1851-1951. Dartington Hall Studies in Rural Sociology. Routledge & Kegan Paul.

SCARGILL D.I. (1968) Economic Geography of France. London.

SCARGILL D.I. (1974) The Dordogne region of France. Newton Abbot.

SCHWARZWELLER H.K. and BROWN J.S. (1967) 'Social Class origins, rural-urban migration and economic life chances: a case study'. Rural Sociology 32, 1, 5-19.

SCHWIND P.J. (1971) Migration and Regional Devopment in the U.S. 1950-1960. University of Chicago. Dept. of Geog. Research Paper No. 133.

SCLAFERT T. (1926) L'industrie du fer dans la région d'Allevard'. R.G.A. pp 239-255.

SCOTFORD-ARCHER M. & GINER S. (eds.) (1971) Contemporary Europe: Class Status & Power. Weidenfeld & Nicholson.

SEE H. (1924) La France économique et sociale au XVIII^{me} siecle. Esquisse d'une histoire économique et sociale de la France depuis les origines jusqu'à la guerre mondiale. Paris.

de SERRES O. (1849) L'agriculture francaise. Paris.

SHANIN T. (1973) 'The nature & logic of the peasant economy - a generalisation'. The Journal of Peasant Studies 1, (1), 63-80.

SHEVKY E. and BELL W. (1955) Social Area Analysis: Theory, Illustrative Application and Computational Procedures. Stanford University Press. California.

SHIRLAW D.W.G. (1966) An agricultural geography of Great Britain. Pergamon. Oxford.

SHORT B.M. (1975) The application of multivariate statistical techniques to the study of agricultural change through time. A case study from the HighWeald 1887-1953. Geog. Dept. King's College, London. Occ. Paper.

SHRYOCK H.S. Jr. (1964) Population Mobility within the United States. University of Chicago. Community and Family Study Center.

SIEGEL J. (1971) An empirical study of the urban hierarchy and its relation to growth in Southern Ontario. Toronto. Centre for Urban & Community Studies. Univ. of Toronto.

SIEGFRIED A. (1930) France: A Study in Nationality. Yale University Press.

SILCOCK H. (1954) 'The phenomena of labour turnover'. Journal of Royal Statistical Society 117, 428-440.

SIMMIE J.M. (1969) The Sociology of Internal Migration. Centre for Environmental Studies. Working Paper No.15.

SION J. (1932) Histoire Agricole de la France. Paris.

SJAASTAD L.A. (1960) 'The relationship between migration and income in the United States'. D.P.R.S.A. 6, 37-64.

SJAASTAD L.A. (1962) 'Cost and return of human migration'. Jour. Pol. Econ. Supplement.

SLATER P.B. (1974) A hierarchical clustering of French regions using interregional migration flows. Discussion Paper. Regional Research Institute, Department of Statistics and Computer Science, West Virginia University.

SMITH J.H. (1966) 'The analysis of labour mobility', in B.C. Roberts and J.H.Smith (eds.), Manpower Policy and Employment Trends. London, Bell.

SOMERMEIJER W.H. (1961) 'Een anlyse van de binnen landse migratie in Nederland eot 1947 en van 1948-1957'. Stat e Econ. Onderzoekingen. 115-74.

SONQUIST J.N. and MORGAN J.A. (1964) The detection of interaction effects. Monograph No.35, Survey Research Centre, Institute for Social Research, University of Michigan.

SORRE M. (1955) Les migrations des peuples. Essai sur la Mobilité géographique. Paris.

SPENGLER J.J. (1938) France Faces Depopulation. Putnam.

S.P.S.S. (1970) Multiple-Regression Analysis: Subprogram Regression. S.P.S.S. Manual.

STEWART J.Q. (1948) 'Demographic gravitation'. Sociometry 11,31-58

STEWART and WARNTZ (1958) 'Physics of Population Distribution'. Jour.Reg.Sci. 1, 99-123.

STOUFFER S.A. (1940) 'Intervening opportunities: a theory relating mobility and distance'. Am.Soc.Rev. 5, 6, 845-867.

STOUFFER S.A. (1960) 'Intervening opportunities and competing migrants'. J.Reg.Sci. 2.

STUTZ F.P. (1973) 'Distance and network effects on urban social travel fields'. Econ. Geog. 49, 134-44.

SUTTER J. and GOUX J.M. (1961) 'L'aspect démographique des problèmes d'isolat'. Population 3, 447-62.

SUTTER J. and TABAH L. (1951) 'Les notions d'isolat et de population minimum'. Population 481-498.

SUTTON K. (1971) 'The reduction of woodland in the Sologne: nineteenth century French regional improvement'. T.I.B.G. 129-144.

SYMANSKI R., MANNERS I.R. and BROMLEY R.J. (1975) 'The Mobile-Sedentary continuum'. A.A.A.G. 65, 3, 461-471.

TAFT D.R. and ROBBINS R. (1955) International Migrations: the Immigrant in the Modern World. Ronald Press.

TAPINOS G. (1974) 'L'immigration étrangère en France de 1945 à 1973', in I.N.E.D. Numéro Spécial 'Les migrations'.

TARRANT J.R. (1969) 'Some spatial variations in Irish Agriculture'. T.E.S.G. 60, 228-37.

TARVER J.D. (1961) 'Predicting migration'. Soc.Forces 39(3), 207-213.

TARVER J.D. (1963) 'Ecological Patterns of Land Tenure, Farm Land uses and Farm Population Characteristics'. Rural Sociology 28, 128-145.

TARVER J.D. and GURLEY W.R. (1965a) 'A stochastic analysis of geographic mobility and population projections of the census divisions in the United States'. Demography 2, 134-9.

TARVER J.D. and GURLEY W.R. (1965b) 'Relationship of selected variables with county net migration rates in U.S. 1950 to 1960'. Rural Sociology 30, 3-22.

TAUEBER K.E. (1966) 'Cohort Migration'. Demography 3, 2 416-422.

TAYLOR R.G. (1967) The human implications of migration from West Durham. Ph.D. Durham.

TAYLOR P.J. (1970) Interaction and distance: an investigation of distance-decay functions and a study of migration on a microscale. Ph.D. Liverpool.

TAYLOR P.J. (1971) 'Distance Transformation and Distance Decay Functions'. Geographical Analysis 3, 221-238.

THOMAS B. (1972) Migration and urban development. Methuen.

THOMPSON I.B. (1970) Modern France: A Social and economic geography. London. Butterworth.

THOMPSON I.B. (1973) The Paris Basin. Oxford University Press. Problem Regions of Europe Series ed. D.I. Scargill.

TINKLER K.J. (1972) 'The physical interpretation of eigen-functions of dichotomous matrices'. T.I.B.G. 55, 17-46.

TOURAINE A. & RAGAZZI O. (1962) Ouvriers d'origine agricole. Paris. SEuil.

TUGAULT Y. (1970) 'La mobilité géographique en France depuis un siècle: une étude par générations'. Population No.5, 1019-1036.

TUGAULT Y. (1972) La mesure de la mobilité. I.N.E.D. Cahier 'Travaux et documents' No.67.

TUTOIT B.M. and SAFER H.I. (eds.) (1975) Migration and Urbanization: models & strategies. The Hague. Mouton.

ULLMAN E.L. (1954) 'Amenities as a factor in regional growth'. Geog. Rev. 44, 119-132.

VALLARCHÉ J. (1953) La mobilité professionelle des ruraux dans une société libre. Fribourg No. 1. Cahiers de l'Institut de Science Economique et Sociale de l'Université de Fribourg.

VALLIN J. (1976) 'La mortalité infantile dans le monde'. Population 4-5, 801-838.

VANCE J.E. (1972) 'California and the search for the ideal'. A.A.A.G. 62, 185-210.

VANCE R.B. (1952) 'Is theory for demographers?' Social Forces 31, 9-13.

VENDÉE (DEPT. OF) (1964) Introduction a l'étude démographique du département de la Vendée. La Roche-sur-Yon. Bureau d'Etudes Economiques et Statistiques.

VEYRET P. (1945) Les pays de la Moyenne Durance alpestre. Grenoble. Thèse.

VEYRET P. (1958) 'Grenoble et son cadre'. R.G.A. 5-21

VEYRET P. and VEYRET G. (1962) Grenoble et ses Alpes. Grenoble Arthaud.

VEYRET-VERNER G. (1948) L'industrie des Alpes françaises. Grenoble.

VEYRET P., VIVIAN R. et al (1973) 'Le centre de Recherches sur la haute montagne alpine de Grenoble'. Rev.Geog.Alp. LXI 19-30.

VIDAL de la BLACHE P. (1917) La France de l'Est. Paris. Armand Colin.

VINCIENNE M. (1972) 'La mobilité des agriculteurs'. Etudes Rurales 45, 48-61.

VIVIAN H. (1959) 'La zone d'influence régionale de Grenoble'. R.G.A. 47, 539-583.

VITTE P. (1976) 'Les agriculteurs migrants en Creuse'. Norois 23(92), 509-527.

WAGNER P.L. and MIKESELL M.W. (eds.) (1962) Readings in Cultural Geography. Chicago.

WARD J.H. (1963) 'Hierarchical grouping to optimise an objective function'. Jour. Am.Stat.Assoc. 58, 236-44.

WARRINER D. (1970) 'Problems of Rural-urban migration: some suggestions for investigation'. International Labour Review Geneva 101, 5 441-452.

WEATHERALL J.A.C. (1975) 'Infant mortality: international differences'. Population Trends 1, 9-12, H.M.S.O.

WEBB J.W. (1963) 'The natural and migrational components of population changes in England and Wales 1921-1931'. Economic Geography 38.

WEBER E. (1977) Peasants into Frenchmen: The modernisation of Rural France 1870-1914'. Chatto & Windus, London.

WEINSTEIN E.T.A. (1975) 'The movement of owner-occupied households between regions'. Reg.Studs. 9, 137-146.

WEINSTEIN E.T.A. (1975) 'Some characteristics of owner-occupier migrant households - a study based on Building Society data'. Reg.Studs. 9, 147-156.

WELCH R.L. (1970) 'Migration research and migration in Britain'. Centre for Urban and Regional Studies, University of Birmingham, Occasional Paper No.14.

WHEELER J.O. (1970) 'The structure of metropolitan work-trips'. Prof.Geog. 3, 152-159.

WHEELER J.O. (1971) 'Social interaction and urban space'. J.Geog. 70, (4), 200-203.

WHEELER J.O. and STUTZ F.P. (1971) 'Spatial dimensions of urban social travel'. A.A.A.G. 61, 371-86.

WHITELAW J.S. (1972) 'Scale and urban migrant behaviour'. Australian Geographical Studies 10, (1), 101-106.

WILBER C.L. (1967) 'Migration expectancy in the U.S.' J.Am.Stat.Assoc. 58, 444-453.

WILKIE R.W. (1972) 'Toward a behavioural model of peasant migration: an Argentine case study of spatial behaviour by social class level'. In Population Dynamics of Latin America: A review bibliography. Robert Thomas (ed.). Indiana, Ball State University Press.

WILLIAMS W.M. (1956) The sociology of an English village: Gosforth. London, Routledge and Kegan Paul.

WILLIAMS W.M. (1963) 'The social study of family farming'. Geog. Jour. 129, 63-75.

WILLIS J. (1968) Population growth and movement. London C.E.S.

WILLIS K.G. (1970) Differential migration in selected areas of North-East England. Ph.D. Thesis, University of Newcastle-upon-Tyne.

WILLIS K.G. (1972) 'The influence of spatial structure and socio-economic factors on migration rates. A case study. Tyneside 1961-1966'. Reg.Studs. 6, (1), 69-82.

WILLIS K.G. (1974) Problems in migration analysis. Saxon House/ Lexington. Richmond.

WILSON A. and REES P. (1976) 'Spatial Demography: some comments'. The Statistician 25, 1, 59-65.

WINCHESTER H.P.M. (1977) Changing patterns of French internal migration 1891-1968. School of Geography, University of Oxford. Research Paper 17.

WINCHESTER S.W.C. (1975) Spatial structure and social activity: a social geography of Coventry. Oxford University. Unpub. D.Phil. thesis.

WINCHESTER S.W.C. (1974) Urban Social Analysis - An explanation, examination and application of factor analysis. School of Geog., Oxford University. Unpub.

WOLPERT J. (1965) 'Behavioural aspects of the decision to migrate'. Papers and Proceedings of the Regional Science Association 15, 159-69.

WOLPERT J. (1966) 'Migration as an adjustment to environmental stress'. J.Soc.Issues XXII, 92-102.

WOLPERT J. (1967) 'Distance and directional bias in inter-urban migratory streams'. A.A.A.G. 57, 3, 605-616.

WRIGHT G. (1974) Rural Evolution in France. 'The peasantry in the Twentieth Century'. O.U.P.

WYATT G.L. and WINGER A.R. (1971) 'Residential Construction, Mover Origin and Urban Form'. Reg.Studs. 5, 95-99.

WYLIE L. (1957) Village in the Vaucluse. Haward Univ. Press. Cambridge, Mass.

YOUNG A. (1890) Travels in France during the years 1787, 1788, 1789. London.

YOUNG E.C. (1928) The movement of farm population. Cornell Agricultural Experiment Station Bulletin 426.

ZASLAVSKAIA T.I. and LIASHENKO L.P. (1975) 'About a Relationship between Socioeconomic Development of the Countryside and Rural Population Migration'. Quality and Quantity 9, 229-243.

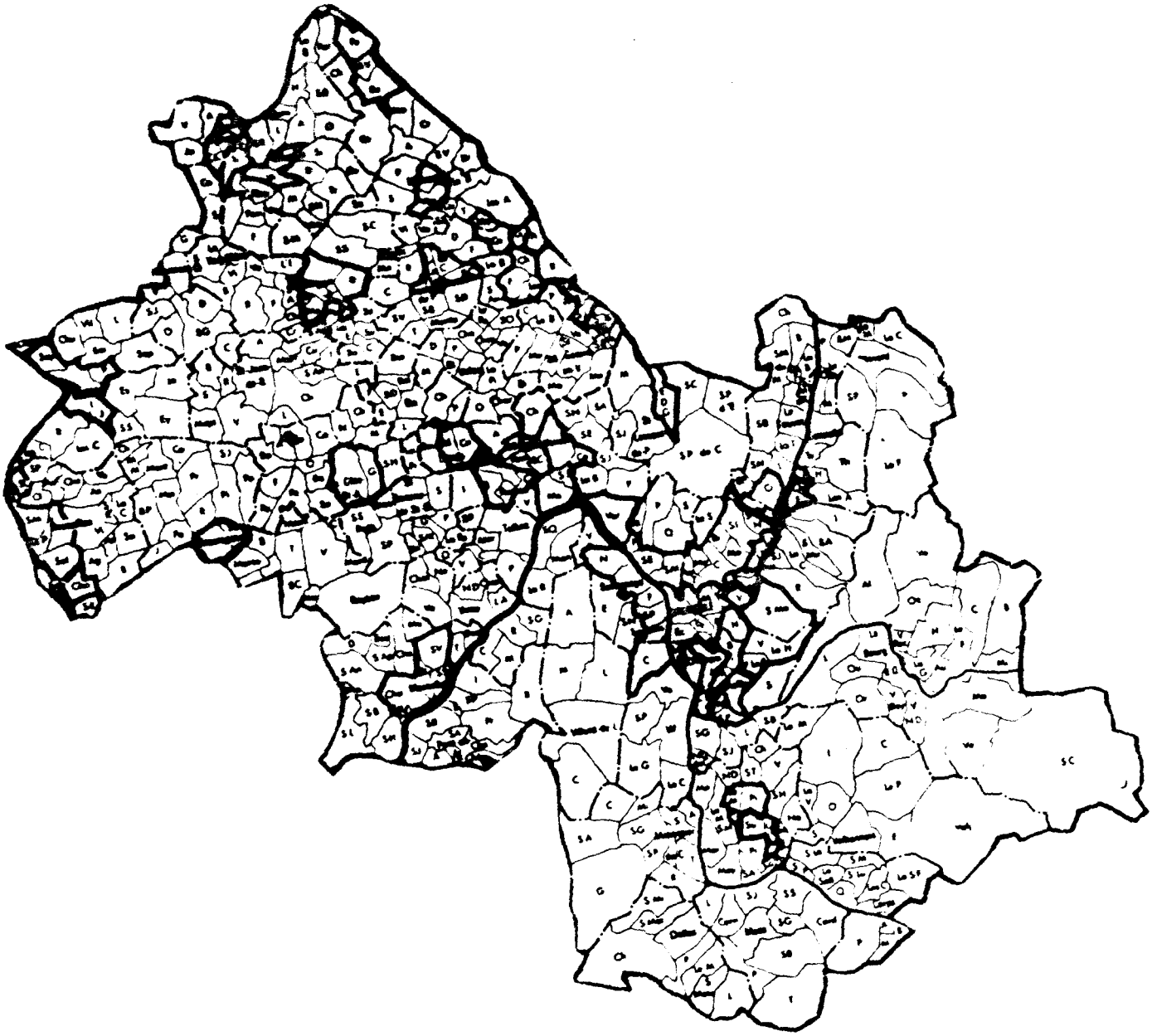
ZELDIN T. (1973) France 1848-1945. Vol.I. Ambition Love & Politics. Oxford at the Clarendon Press. Oxford History of Modern Europe; General Editors Alan Bullock and F.W.D. Deakin.

ZELINSKY W. (1962) 'Changes in the geographic patterns of Rural Population in the United States 1790-1960'. Geog.Rev. 52, 492-521.

ZELINSKY W. (1971) 'The hypothesis of the mobility transition'. Geog. Rev. 61, 2, 219-249.

ZELINSKY W. (1974) 'Selfward Bound? Personal Preference, Patterns and the Changing Map of American Society'. Economic Geography 50, 144-179.

ZIPF G.K. (1946) 'The P_1P_2/D Hypothesis; on the intensity movement of persons'. Am.Soc.Rev. 11, 677-686.



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N.B. - Les • correspondent aux emplacements des chef-lieux de département.