ITALY
Uniform with this volume

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E. Estyn Evans  

SPAIN  
W. B. Fisher and H. Bowen-Jones  

GERMANY  
T. H. Elkins  

HUMAN GEOGRAPHY  
Emrys Jones
ITALY

by

J. P. COLE

1964

CHATTO & WINDUS
LONDON
PREFACE

This book is intended for sixth-formers studying Geography at Advanced and Scholarship level of the General Certificate of Education. It is hoped that first-year students in universities will also find it useful. I have tried to be both comprehensive and concise, and I hope that the system of subdividing the book into sections as well as chapters will help those who may wish to explore only one particular aspect.

The main purpose has been to provide an account of the geography of Italy at the present day. Only limited space has therefore been devoted to the evolution of the present physical landscape, and more attention has been given to describing it as it now is. Similarly no attempt has been made to reconstruct the geography of Italy at past periods, and only a brief outline of the peopling of the country and the principal political and economic changes in the period before unification a century ago have been included. In the view of the author only the changes of the physical environment that are currently taking place, such as the retreat of glaciers, the advance of the coastline in places, the activity of volcanoes, the process of gullying and so on, are of direct interest to the present-day geography.

In the same way, although the results of human activity over the last few millennia are widely in evidence today, it is the activities of the last century or so and the processes that continue now, that largely explain the present human geography of the country.

There is no fixed way in which a regional geography book should be written, and the order in which the topics and regional descriptions have been put in this book is the one considered by the author to be the most suitable in his view for an account of the geography of Italy. A summary of the physical conditions without reference to their influence on human activity\(^1\) and a brief historical sketch precede the main

\(^1\) It seems to be more and more widely the practice in regional studies not to separate physical from human but to deal with the two simultaneously, stressing their mutual interaction. For the purposes of many readers, however, a separate chapter on the physical background seems desirable. See particularly R. Hartshorne's views in *Perspective on the Nature of Geography*, London 1959, especially Ch. VI.
body of the book. Population is then dealt with as being the
‘essential geographical expression’, transportation, and then
productive activities. For various reasons service activities are
of less interest to the geographer, but these have also been
referred to. After this, the country is divided into four main
regions for purposes of description and these are further
divided on a convenient basis, without going deeply into the
complex question of distinguishing regions in Italy. Finally
the various themes are rounded off with some concluding
words on present trends and future possibilities. The reader
may feel that excessive attention has been given to topics
covering Italy as a whole and too little to regional studies. The
theme is Italy as a single political and economic unit, however,
and in order to treat this as fully as possible, much regional
detail has had to be left out. The location in Italy of small areas
illustrated in various figures will be found in Appendix 7.

Although the works of Italian geographers are not so
numerous, nor so well known in Britain, as those of their
French and German neighbours, there are many distinguished
names, and much work of great interest and importance. The
various Italian journals mostly contain the work of Italian
university geographers, but, particularly during the inter-war
period, the government of Italy encouraged research. During
the Fascist period, therefore, considerable progress was made
in various geographical fields, although authors had at
frequent intervals to make flattering references to the regime.
A great deal of statistical material was mapped by non-
university bodies, while university geographers pursued their
various interests, particularly geomorphological problems of
Italy and studies of settlement types. Since the war much useful
work has been produced by Italian geographers, but this has
been largely devoted to subjective studies of the landscape
and there have been few attempts to measure distributions
quantitatively. Further reading is suggested at the end of
chapters and in addition to the limited number of papers on
Italian topics in well known English, American and French
geographical periodicals a number of important Italian works
have been indicated. There is an additional bibliography in
Appendix 9.

1 See D. J. M. Hooson, The Distribution of Population as the Essential
PREFACE

As only 1959 figures were available when much of this book was being written it has been necessary to depend to a considerable extent on these. Before completion, however, 1960 figures and even some preliminary results of the 1961 censuses of industry and population were obtained. As it is desirable to make accurate comparisons of 1951 and 1961 data, 1961 figures have therefore been used on several occasions. For many purposes (e.g. agriculture, power stations) 1959 figures do not differ appreciably from those for 1960 and 1961, but where great changes have occurred since 1959 these have been noted wherever possible.

A considerable number of Italian names for towns and administrative areas have English equivalents widely used in this country and most of these have been used in this book. The Italian region Lombardia, for example, is always referred to as Lombardy, and the town and province of Napoli as Naples. Throughout this book the English version is used, and Appendix 8 shows the equivalents. At times, too, it has been useful to introduce at appropriate places or even adopt permanently certain Italian terms that do not lend themselves to a straightforward translation. These are explained where they occur in the text. For the measurement of distance and altitude, metric system units have been used. For climatic data the British equivalent is given.

The author wishes to thank Professor Mario Ortolani of the Istituto di Geografia at Pavia University for the enormous amount of help he has given in every way over the last fourteen years. Without this the author's various visits to Italy, including a British Council Scholarship to Collegio Borromeo, Pavia University, in 1950–51, would have proved much less fruitful than they have been.

He is greatly indebted, also, to Dr C. A. M. King, for her advice in the chapter on the physical background. Finally he thanks the Department of Geography, Nottingham University, for the maps, and Mr A. Bailey and Mr S. Willis for the great trouble they have gone to in producing them.
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CONVERSION OF METRIC 
AND BRITISH UNITS

1 metre = 3.3 feet
1 kilometre = 0.62 mile
1 hectare = 2.47 acres
1 square kilometre = 0.386 square mile
1 kilogram = 2.2 pounds
1 metric ton = 1,000 kilograms
             = 2,205 pounds
Chapter I

INTRODUCTION

1.1 ITALY IN ITS WORLD SETTING

In comparison with most countries of the world Italy has a large population for its size. With 50½m people (in 1961) it is eleventh in the world in population and is close to West Germany, the United Kingdom and France according to number of inhabitants; its birthrate (18·5 per thousand per year) is also similar. It is somewhat larger in area than West Germany and the United Kingdom, but appreciably smaller than France. Even so, though obviously different from these other three countries, as will become clear in later chapters, it is opportune to stress at this stage, from a world point of view, the general similarity of the four countries in size and level of economic development, as well, of course, as their location in the same part of the world.

Italy has played a leading part both in forming the culture of West Europe and in making an impact on the rest of the world, even though its late attempts at empire building were a dismal failure, its colonies in Africa largely arid wastes and its annexation of Ethiopia in the late 1930s widely opposed and short-lived. Italians of the later Middle Ages and the Renaissance were responsible for many of the technological innovations that led to the great oceanic discoveries, and participated themselves, though on behalf of other countries, in exploration. During the last hundred years they have settled in very large numbers in the U.S.A. and parts of Latin America. Since the Second World War Italian influence as a trading nation has grown rapidly, Italian shipping and air routes are widespread, and Italian firms have participated in large construction projects in many parts of the world.

Though not so advanced as the leading industrial countries of the world, Italy is relatively highly industrialised. The figures in the following table (see next page) show employment in the three main branches of the economy in 1951 and 1960. While accounting for 32% of employment in 1960, agriculture only accounted for 17% of the gross domestic product in that
year, while the figures for industry were 28% and 43%. Even so, agriculture still plays a more prominent role in the Italian than in the British economy. In the United Kingdom agriculture is responsible for only about 4% of employment and of gross domestic product, while industry accounts for 47% of gross domestic product. At the other extreme, in Nigeria (for example) agriculture is of overwhelming importance, giving 63% of gross domestic product, while industry provides only about 10%.

In consumption per inhabitant of power and of steel Italy occupies an intermediate position in the world, while the level of its per capita gross national product, $U.S. 700 per person per year, puts it between the United Kingdom, West Germany and France (all around $U.S. 1,400) and the truly backward countries of the world (most below $U.S. 200). The

1 1963 figures show that the decline in employment in agriculture is continuing in the early 1960s. Figures are for January 1963.

<table>
<thead>
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<th>Employment in thousands</th>
<th>Percentage</th>
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<tr>
<td>Agriculture</td>
<td>4,941</td>
<td>25</td>
</tr>
<tr>
<td>Industry</td>
<td>8,011</td>
<td>40</td>
</tr>
<tr>
<td>Other activities</td>
<td>6,247</td>
<td>31</td>
</tr>
<tr>
<td>Unemployment</td>
<td>827</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>20,026</td>
<td>100</td>
</tr>
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</table>

Source: Corriere della Sera, 2 April, 1963

Note that industry in the 1963 definition is used in a broader sense than in the 1951 and 1960 sets of figures.
Italy in Europe

Figure for the U.S.A. is however about four times as high. In many respects, including degree of industrialisation and urbanisation, Italy resembles fairly closely the U.S.S.R. and Japan, and it should be noted that modern industrialisation began roughly at the same time in all these three countries.

1.2 Italy in Europe

Italy has about one-sixth of the population of non-communist Europe. Since the Second World War it has participated in most of the military and economic enterprises for co-operation, and became a founder member of the European Economic Community, signing the Treaty of Rome in 1957. This step, in the view of the author, is as important to the country as unification was a hundred years ago when, during 1860–70, various political units amalgamated to form modern Italy. The implications of E.E.C. are discussed in Chapter 14. Its impact on Italy must eventually be greater than that of either of the two world wars or the intervening period of Fascist domination.

Among the six founder members of E.E.C. Italy appears to occupy the most peripheral position on account of its southerly location. At the same time it is clearly the poorest member economically, though its economy has tended recently to expand more rapidly than that of most of its partners, and the gap is expected to narrow even further in the 1960s. But the last word has not been said on membership of E.E.C., and Fig. 1.1 suggests that with Greece (joined in 1962) and Turkey (1963) as associate members, Italy's position becomes more central, at least in relation to area, if not to economic wealth, while if Spain also joins, the position Italy held in the Roman Empire at its peak may to some extent be repeated. Though of little practical use, the comparison after nearly 2000 years is at least worth noting. The superficial resemblance between the north-east frontier of Rome and the current limit of the communist bloc is evident, but in E.E.C. the centre of economic activity is clearly along an axis from Paris to the Ruhr and not, as in Roman times, in Italy and the Eastern Mediterranean.

1.3 Italy as a Nation

So far Italy has been considered as a single economic and political unit within a wider setting. The main purpose of this
Fig. 1.1 The position of Modern and Roman Italy.
book will be to stress the great diversity to be found in the
country itself, both in physical and in human conditions, be-
tween various parts. In anticipation it may be suggested that
superior conditions for agriculture and industry, including a
more favourable physical environment (relief, climate, soils
and so on) for farming, and a socially and politically more
advanced population, have helped northern Italy for at least
several centuries, with the result that there is now an enormous
gap in living standards between the most prosperous parts of
the North and the poorest parts of the South. The theme of the
so-called problem of the South is inseparable from a study of
the geography of Italy and appears frequently in this book.

Here a few words are necessary about the term Italy. This
was first used several centuries B.C. with reference to the
southern part of the Peninsula, and later, after its annexation
by Rome, the North of Italy as well. Later still, Sicily and
Sardinia were also included. Italy therefore existed at the time
of the Roman Empire, though it did not apply to a clearly
defined administrative unit as it does today, but rather to a
general area, obviously an important one, within the Empire.
With the gradual disintegration of the western part of the
Empire, Italy, through being split among various units, ceased
to refer even to a specific piece of territory, except when, at
times, a unit called Italy referring to some part of the country
was temporarily resurrected. Thanks however to the common
cultural heritage based both on language and religion, some
kind of Italian consciousness remained, especially in the North
and Centre, and although Italy failed to emerge with England,
France, Spain and other countries as a modern nation after the
Middle Ages, the idea of unification grew in the 18th and 19th
centuries, and unification was proclaimed in 1861. Though
conveniently delimited by coasts or by the crest of the Alps
almost everywhere, perfectionists in post-unification Italy have
devised an Italian region (la regione Italiana), which is some-
what larger than the present Italy and is bounded by the main
watershed of the Alps, extends into France to Nice, and into
Istria, and includes the Ticino canton of Switzerland, Corsica
and Malta. The Fascists hoped to achieve the extended ver-
sion in the Second World War but the idea is no longer taken
seriously.

For the various purposes of description in this book Italy is
divided into different sets of regions and Fig 1.2 is included
here to enable the reader to become acquainted with some of the simplest terms and names. Italy is often divided into three self-explanatory areas (Fig. 1.2a), continental, peninsular and

![Map of Italy with regions labeled](image)

**Fig. 1.2** Major regional and administrative names. See text for further explanation.

insular. Continental Italy is sometimes referred to as 'High Italy' (L’Alta Italia) and Italy south of Rome as 'Low Italy' (La Bassa Italia). More frequent is the term Mezzogiorno (South, literally Mid-day) referring very approximately to the southern half of the country. More precise are the divisions shown in Figs 1.2b and c, widely used for statistical purposes. The four in Fig. 1.2b, in reality groups of regioni in Fig. 1.2d, are
used throughout this book with a capital. Recently the three statistical divisions shown in Fig. 1.2c have come into use. Fig. 1.2d shows the nineteen regioni. These, too, are used throughout the book for purposes of description and location, and are worth memorising. They in turn are divided into ninety-two provinces (province), which are shown in Appendix 3. For comparison the eleven regions of Italy at the time of Augustus nearly 2,000 years ago are also mapped (Fig. 1.2e). There is clearly a close resemblance between the two, but although certain names have remained throughout the intervening period, many have disappeared, to be restored only in post-unification Italy, while some have disappeared altogether and others have 'migrated'.

SUGGESTIONS FOR FURTHER READING


F. Milone: L’Italia nell’economia delle sue regioni, Edizioni scientifiche Einaudi, Torin 1955

Various authors: Studi geografici pubblicati in onore del Prof. Renato Biasutti, Florence 1958

D. S. Walker: A Geography of Italy, Methuen, London 1958

R. Almagia: L’Italia (2 volumes), Unione Tipografico-Editrice Torinese, Torin 1959

Touring Club Italiano: Il paesaggio, Conosci L’Italia series, Volume VI, Milan 1962

UTET (Unione Tipografico – Editrice Torinese) series on the regioni of Italy, one volume per regione. By early 1963, seven regioni had appeared: Piemonte e Val d’Aosta, Liguria, Veneto, Friuli–Venezia Giulia, Emilia–Romagna, Marche, Basilicata. These works are not strictly geographical but they are excellently illustrated and have useful maps and an interesting text.
Chapter 2

PHYSICAL BACKGROUND

2.1 INTRODUCTION

Italy lies within Southern or Mediterranean Europe and consists of part of the Alps, the lowland of the river Po to the south, the Apennines with adjoining hills and lowlands projecting far south-east into the Mediterranean, and two sizable islands, Sicily and Sardinia. Considering its size it contains a wide variety of both relief and climatic conditions. Precisely how the Alps and Apennines were formed is one of the great problems of European structural geology, but it is not within the scope of this book to do more than outline very briefly the main aspects of the geological evolution of the country, and what follows is therefore mainly a description of physical conditions in Italy as they are at present. To avoid repetition, certain physical features such as land forms peculiar to a limited part of the country are only briefly referred to in this chapter and are discussed in more detail in appropriate regional chapters.

2.2 RELIEF

A useful starting point for the study of the surface of Italy is a consideration of three main types of relief: mountain, hill and plain. Fig. 2.1 shows the distribution of these elements, the definition of which is based broadly on altitude, the mountain areas being mainly above 1,000 metres, though containing many valleys below this level, the plains consisting of level or gently sloping land below about 300 metres, whether coastal or interior, and the hill country comprising the intermediate areas. The land classified as plain (pianura) occupies a little over one-fifth of the total surface of Italy while hill country (collina) accounts for over two-fifths and the mountain country (montagna) for somewhat less than two-fifths. The proportion of each of the three main types in Italy's nineteen regioni is shown in Appendix 2.

Although the basis for the division into three main types of relief is altitude, both relative relief and slope conditions are broadly related to altitude. In the mountain regions relative
relief is greatest, reaching as much as 3,000 metres between valley floors and adjoining mountain summits in the Alps,

and 2,000 metres in the highest parts of the Apennines. In the hill country it may reach several hundred metres in places. The mountain areas, too, tend to be the most rugged, having the steepest slopes, though gently sloping areas do of course
occur. Much of the hill country is however also greatly dissected and is characterised by steep slopes, even though relative relief is not great; on the other hand, some hill country consists of gently sloping low plateaux. In the plains, naturally, slopes are generally gentle and relative relief slight.

The Alps, the Apennines and the mountains of Sicily form an almost continuous belt of mountain country of varying width, extending in the form of an S some 1,300 miles in length from the extreme north-east of Italy, first west, then curving round to Liguria and extending south-east and then south through the Peninsula and finally running from east to west across northern Sicily. There are other small mountain areas both in the Peninsula detached from the main range of the Apennines as in Tuscany, and in the island of Sardinia.

Italy has only one large area of plain, the North Italian Lowland, which lies between the Alps and the Northern Apennines, but there are many smaller plains in the Peninsula and Islands, some at or little above sea level along the coasts, others at a considerable altitude, forming small interior basins. The scale of Fig. 2.1 is too small for all of these to be shown but they may be seen in greater detail in Figs 11.1, 12.1 and 13.1.

Almost everywhere hill country intervenes between the mountains and the plains, as around the North Italian Lowland, and between the mountains and the coast, as in the Peninsula and Islands. The most extensive areas of hill are in Central Italy but like both mountain and plain this form of relief occurs in almost every region. In almost any sizable part of Italy, indeed, a bewildering variety of relief conditions may be found, but a contrast between the North and the Peninsula should be noted. In the North, a series of roughly north–south sections shows the same general sequence of mountain–hill–plain–hill–mountain. On the other hand, roughly south-west–north-east sections across the Peninsula, while almost invariably crossing some mountain and hill and usually some plain, differ appreciably in the arrangement of these elements at different places along the Peninsula.

Italy has been divided into complicated physiographic regions by more than one geographer and it should be appreciated that no single system of regions satisfies everyone, since the result depends on the emphasis given to such varying criteria as altitude, age of rock, type of rock or predominant type of
land form. For example, a convenient break in altitude in the Apennines, separating two high mountain areas, does not necessarily coincide with a geological or structural change. In spite of lack of agreement on how best to divide Italy into physical regions it is worth while considering a division made not long ago by the Italian geographer, A. Sestini, thereby introducing the reader both to the kind of terms used by Italian geographers and to the actual physiographic regions themselves.

In his division of Italy into major relief regions (grandi regioni orografico-morfologiche), Sestini notes the fundamental threefold division of mainland Italy into the Alps, the Apennines and the Plain (pianura padano-veneta). The Alps may satisfactorily be further divided into longitudinal zones. Sestini's regions are shown in full in Fig. 2.2a. A and B represent the Alps proper, A the central crystalline Alps, B the limestone Alps and Pre-Alps, which do not exist west of Lake Maggiore. C is post-war Italy's diminutive share of the karstic area of Yugoslavia and D a so-called Sub-Alpine zone of morainic hills (anfiteatri morenici), outwash plains (altopiani diluviali) and foothills of the Alps, some detached. E is the North Italian Lowland, F the Apennines, G the Tyrrenian and Adriatic 'Anti-Apennines', and H and I Sicily and Sardinia. Regions A, B and D–G are subdivided, and here the reader may usefully be introduced to the Western, Central and Eastern Alps, the Toce valley and line of the Giudicaria fault, forming convenient if arbitrary dividing lines, and to the Northern (F1), Central (F2), Southern (F3) and Calabrian (F4) Apennines, with the hill country of the Langhe and Monferrato as a subdivision of the Northern Apennines. These major divisions of the Alps and Apennines are of course further subdivided, as will be noted in later chapters on the regions of Italy. The North Italian Lowland (E) is also subdivided, the north-eastern part being separated by the Berici and Euganei uplands from the main Po–Adige basin, while the 'Anti-Apennines' are divided into a Tuscany section (G1) and a Lazio and Campania section (G2) on the Tyrrenian side, and Gargano (G3a)

2 Not to be confused with the structurally different Pre-Alps on the northern side of the Alps.
Fig. 2.2a, A. Sestini's major physical regions. b, Italy in the Pliocene period. c, Mountain passes and coasts. 

*Note:* The Italian names for the passes are given on this map. See text for further explanation of a.
and the Murge and Salentine Peninsula (G3b) on the Adriatic side. Fig. 2.2c names in Italian the main passes over the Alps and Apennines and shows also features of the coasts.

2.3 GEOLOGY AND STRUCTURE

Although rocks of no great age, geologically speaking, outcrop over much of the surface of Italy, almost every geological period is represented somewhere in the country. A great variety of different types of rock is also to be found, and it is the nature of these rocks and the way in which they have been formed and now outcrop rather than their age, that help to account for present land forms.

Lower Paleozoic rocks appear at the surface only in a few localities, being most extensive in the southern half of Sardinia, where they include limestones and are highly folded, but old rocks occur also in the Alps. The Carboniferous rocks of Italy differ markedly from those further north in Europe in having very few coal deposits, because conditions were less favourable for their formation. During Carboniferous and Permian times Italy, like areas further north, was affected by the Hercynian earth movements, and mountains were formed in the same general area that in Tertiary times became the Alps. Hercynian massifs were also formed in Calabria and northeast Sicily as well as in Sardinia.

After the Hercynian earth movements in the latter part of the Paleozoic era the general area of Italy was covered by the sea for long periods and on account of the absence of land nearby, limestones are therefore typical of Permian, as well as of the Mesozoic era (Triassic, Jurassic and Cretaceous). Most of Italy's limestone areas are of Jurassic or Cretaceous origin, as in the limestone Alps and Pre-Alps of Lombardy and Veneto, the Central Apennines and the mountains and hill country of Apulia. Towards the end of the Mesozoic era and during the Tertiary era before the great period of Alpine mountain building, gravels, sands and clays as well as limestones and marls were being deposited, and Eocene, Oligocene and Miocene sandstones and clays form a large proportion of the present Northern and Southern Apennines and Sicily, while the earlier clays of late Cretaceous times (argille scagliese) are characteristic particularly of the Northern Apennines.

Italy to a large extent owes its present general form and outstanding physical features to the mountain building that
took place in the Miocene period and led to the formation of the Alps and Apennines structurally roughly as they are today, though the ranges have of course been greatly reduced by erosion and later uplifted since their original formation. Intrusive rocks were formed widely and volcanic activity was widespread. Existing sedimentary rocks were drastically folded and faulted and in many areas were thrust laterally great distances, with older strata in some places finally ending up resting upon younger strata. In the north-west or crystalline Alps the thrust was roughly from south to north while in the Apennines it was from the Tyrrenian side towards the Adriatic side. The direction of fold lines was often determined by the distribution of pre-existing resistant blocks. The Tyrrenian and Adriatic areas formed troughs. The formation of nappes is characteristic of both the Italian Alps and the Northern Apennines, but although the process also occurred further south in the Peninsula, the result of earth movements here was more to block fault the widespread limestones, leaving upstanding blocks and intervening basins. The mountains of the northern half of Italy tend to have such a complicated evolution and consist of so many different types of rock that present relief bears little relationship to underlying structure and rock types. In the southern half of the country, on the other hand, where tectonic relief is common, there is clearly a closer relationship, as in the limestone areas of the Central Apennines and Apulia, and in the crystalline massifs of Calabria.

Towards the end of Tertiary times, after the termination of the more drastic Alpine earth movements, Italy had already assumed very broadly its present shape. Fig. 2.2b shows the land during the Pliocene period. What are now the mountain areas then stood above the sea but, except in Sardinia, most areas that are now hill country and plain had not yet been formed. During the Pliocene period, gravels, sands and clays were deposited around the coasts of the land of that time and also in numerous small basins within the Peninsula itself, and Pliocene deposits are today found flanking both sides of the Apennines in many places, reaching as high as several hundred metres, and forming hill country.

One final brief but extremely important phase in the evolution of Italy has followed the Pliocene, the glacial period in the Pleistocene. During this period there were at least four
main onsets of glaciation and these profoundly influenced the land forms of the Italian Alps and also affected limited high areas in many parts of the Apennines. Glaciers from the Alps spread far into the lowland to the south and during and after the glacial period an enormous amount of material was deposited in the North Italian Lowland. When sea level was at its lowest during the last glaciation what is now roughly the northern half of the Adriatic was land, and almost everywhere along the coasts of the Peninsula and Islands the land also extended further than it does now. The North Italian Lowland, therefore, is Quaternary or recent, and along the coasts of the rest of Italy there are also many smaller deposits of this time, some of the most recent actually at sea level, others at certain commonly found moderate elevations above sea level.

2.4 LAND-FORM TYPES

In the first section of this chapter the main features of relief were outlined; in the second chapter the distribution of the principal rock types was described. Now it is necessary to look in more detail at the various land-form types, some of wide occurrence, others confined to small areas. Italian geographers have reached agreement on defining about ten principal land-form types (forme di terreno) in their country, each a characteristic combination of surface features and underlying rocks. The distribution of these land-form types is mapped in greatly simplified form in Fig. 2.3 and as each type is referred to at various stages later in the book and some are mapped in greater detail elsewhere their distribution should be borne in mind. Types 1–42 are usually associated with mountain areas, while 43b–8 usually form hill country. Plains (9) are left unshaded. The caption under Fig. 2.3 lists each land-form type found on the map and a brief description of each now follows.

The first principal land-form type (1 on Fig. 2.3) consists of mountain areas formed largely of crystalline rocks. In the North these represent the Western Alps and the highest, northern parts of the Central and Eastern Alps. The crystalline Alps were for the most part profoundly affected by all the glaciations of the Pleistocene period, the evidence of the latest glaciation being the most conspicuous. Small glaciers survive in places in the highest parts and there are considerable snowfields. Sharp, frost-shattered peaks stand out either individually (Monte Viso, the Cervino) or in impressive clusters.
Fig. 2.3 Principal types of land form. See text for a description of each type. 
1, Crystalline rocks. 2, High limestone areas. 3, Sandstones, marls and clays. 
4, Volcanic: a, cones; b, other material. 5, Low limestone plateaux. 
6, Incised tablelands of Sicily and Sardinia. 7, Pliocene hill country. 
8, Terminal moraines. 9, Limits of plains. 10, Limit of flood plain in North 
Italian Lowland. 11, Lagoon coast. 12, Southern limit of glaciated land 
forms in Alps.
LAND-FORM TYPES

(the Monte Bianco and Monte Rosa areas). Valleys are usually steep-sided with narrow flat floors, their cross-sections being U-shaped, while many passes are due to erosion by diffusent ice. Minor valleys frequently ‘hang’. Other features of the landscape are frequent corries (cirche) and arêtes (crestè), especially pronounced in the areas of most resistant rocks, and the numerous alluvial fans along the larger valleys. In Calabria north-east Sicily and Sardinia, crystalline mountain landscapes recur, but they were not affected by glaciation, are lower (below 2,000 metres) and generally more rounded than the Alps.

Limestone (type 2 in Fig. 2.3) is the dominant rock in the southern half of the Alps east of the Ticino, in an extensive area in the central part of the Peninsula, and in smaller mountain areas in the South and Islands. In the Alps it was only affected by glaciation in the higher northern part, where in the Trentino–Alto Adige massive tower-like mountains with precipitous sides and sometimes extensive flat tops in the Dolomites differ notably from the more pointed form of the mountains generally associated with the Alps, but land-form features are broadly comparable.

Fig. 2.4a is a small area in the high crystalline Alps near Monte Rosa. Features in the area include glaciers and arêtes as well as hanging valleys. Fig. 2.4b shows part of one of the main valleys in the Alps, the Val Venosta between Merano and Bolzano. Characteristic are the steep but by no means smooth valley sides, the alluvial fan, almost perfectly semi-circular in shape, and the flat valley floor, clearly still ill-drained in places but with the river course now regularised.

The southern fringe of limestone between the high, glaciated Alps and the Northern Lowland, is lower and less impressive than the areas so far described but is still rugged in many places. Karstic features occur in places. Many of the highest and most rugged areas in the Apennines are also associated largely with limestones. In limited areas they reach 3,000 metres; above about 2,000 metres they have been affected by glaciation, and in the Apuanian Alps of Tuscany and the Gran Sasso in the Abruzzi reproduce in miniature land forms reminiscent of the Alps. They can be spectacular, too, where they approach the coast, as near Naples (the Sorrento Peninsula) and Palermo (Monte Pellegrino). Except in Istria and Apulia (see type 5), however, karstic features are not widespread
Fig. 2.4  

a, Glaciated area in the high crystalline Alps near Monte Rosa. 
b, Valley features in the Bolzano Alps.  
c, Features of the Riviera coast south-east of Genoa.
in the limestone areas of Italy. This appears to be due both to the widespread occurrence in the predominantly limestone areas of thin beds of other types of rock and to the youthful stage of erosion. Surface drainage is therefore present, but there are also underground streams and caverns (grotte).

The third group of rocks (type 3) frequently associated with mountain areas in Italy and having certain characteristic surface features are the sandstones, marls and clays of the Peninsula and Islands. Fig. 2.3 shows that these rocks are widely distributed but are most extensive in the Northern Apennines. The general altitude of the sandstone, marl and clay areas is lower than that of the limestone areas and features are generally more rounded. In many places, however, steep-sided cappings (balze) of sandstone or limestone stand above undulating clay outcrops, forming prominent features. Landslides (frane) are common where clays are covered by other more permeable rocks and dip at appropriate angles for these to slip. The clays, in their turn, are afflicted in many areas by gullying and the formation of badlands (calanchi), characteristic particularly of the argille scaglie of Cretaceous times. Although not generally so high as either the limestone or the crystalline mountains of the Apennines, the sandstones, marls and clays can give rise to very broken country, as in parts of the Northern Apennines and in Basilicata. Fig. 2.5c shows an area in Basilicata in which such rocks outcrop. The valley floors are occupied by the gravel-strewn beds of rivers that are full in the winter but dry in the summer. The land rises irregularly but steeply to narrow ridges several hundred metres above the valley floors, only to descend as precipitously to neighbouring valleys. Fig 2.6 illustrates in detail two areas of gully ing in clay country in the Northern Apennines. The many small streams are a characteristic feature. Fig. 2.4c shows a small area in the Riviera di Levante illustrating both the Northern Apennines where they approach the coast and some features of the Riviera coast itself.

Features formed on material deposited by Tertiary and later volcanic activity are shown in Fig. 2.3 as type 4 and are mapped in more detail in Fig. 2.7. Cones and craters, mostly now extinct, form prominent and characteristic if not very extensive mountain or hill areas (e.g. Monte Amiata, Vesuvius, Etna). In contrast to the volcanic cones (4a) are the areas of hill country formed on lava flows (4b). These are
Fig. 2.5  

a, The Po flood plain near Piacenza. 
b, Vesuvius. 
c, Hill country in Basilicata.
widespread in Lazio and occur also in Sardinia. In Lazio they are referred to as the volcanic plateau, the surface of which is dissected by many small rivers in slightly incised valleys, and the edges of which are abrupt in places. Around Vesuvius and the Campi Flegrei the volcanic material forms a plain. Vesuvius is illustrated in greater detail in Fig. 2.56.

Fig. 2.6 Examples of gullyng in the Northern Apennines. For simplicity the contours in the area affected by gullyng in a have been omitted.

Distinguished in Fig. 2.3 from the predominantly mountainous limestone areas (3) are the extensive limestone plateaux of Apulia (5). Here, as in Yugoslavia, with which the Apulian limestones are associated structurally, the almost pure limestone deposits of great thickness exhibit marked karstic features, including a complete absence of surface drainage, many dry valleys (gravine), and caverns. The Gargano block,
about 1,000 metres high, and the lower Murge to the south-east both have flat or gently sloping surfaces and descend in steps to the coast, Gargano more precipitously than the Murge.

A landscape of limited extent is distinguished in Fig. 2.3, the so-called ‘incised tablelands’ (6) (tavolati incisati). This form

![Volcanic Activity and Earthquakes Map](image)

**Fig. 2.7 a, Areas of volcanic activity. b, Areas subject to intense earthquakes.**

is most prominent in the Monti Iblei of south-east Sicily, where a raised ‘platform’ of Tertiary limestones, partly covered with lava flows, has been dissected by streams flowing radially from a central point. Much more widespread and characteristic are the Pliocene hill areas (7) of the Monferrato in the North, and of many places in the Peninsula and Sicily. These hills, formed mainly of clays, marls, conglomerates and less resistant sandstones than those of type 3, flank the Apennines
LAND-FORM TYPES

on the Adriatic side almost throughout the Peninsula and occur widely also in Tuscany and Sicily. The Pliocene basins within the mountains of the Peninsula have however been indicated separately in Fig. 2.3. The Pliocene hills rarely exceed a few hundred metres in altitude but are characterised by extreme dissection due to falls of base level allowing rejuvenation.

A special form of hill country (8) is provided by the terminal moraines occurring at the mouths of those Alpine valleys that carried the largest glaciers. Each area has its own particular arrangement of moraines, some of which are as much as 200 metres high, but all are characterised by indeterminate drainage and small lakes. Fig. 2.8a shows the grandiose morainic amphitheatre where the Dora Baltea enters the plain from the Valle d’Aosta. It should be noted that the major lakes of the North occur either in structural depressions or in valleys greatly over-deepened by ice and their present size would be little reduced by the removal of the moraines.

Areas of plain (9), whether the great continuous North Italian Lowland or the many separate small coastal lowlands and interior basins of the Apennines, have been left unshaded in Fig. 2.3. One basin, the Fucino, is shown in greater detail in Fig. 2.8b. The surface of these lowlands is by no means uniform. Generally fans of coarser material are found close to adjoining hill or mountain areas while the central parts have finer material. Except in the North Italian Lowland these characteristics have not been differentiated in Fig. 2.3, but in this latter area the present flood plain (indicated by dotted line – 10) is distinguished from the higher ‘terraced’ plain to north and south; on the northern side a low but abrupt cliff marks the junction of flood plain and terraced plain. Fig. 2.5c shows the river Po near Piacenza where its flood plain is a few miles wide, and to the north its characteristic abandoned courses as well as the edge of the terraced plain. Where the larger rivers from the Alps have cut shallow trenches into the terraced plain long tongues of flood plain follow their valleys towards the foothills of the mountains. The terraced plain is itself divisible into a higher part adjoining the foothills and made up of coarse materials with little surface drainage, and a lower part with finer material and abundant surface water. Towards its widening eastern extremity the flood plain of the
Fig. 2.8  

a, The terminal moraine area at the mouth of the Dora Baltea valley, Ivrea.  
b, the Conca del Fucino, a Pliocene basin in the Central Apennines.
Po and Adige is below the level of the rivers crossing it due to the building of levees.

A final landscape of particular interest though limited occurrence is the lagoon and delta area (L) separating the North Italian Lowland from the Adriatic. Behind littoral sand barriers is a zone 10–20 miles wide of lagoons, those still connected with the sea known as live (lagune vive) and those now cut off and silting up called dead (lagune morte). The Po and Adige find their way to the sea in a tangle of channels that form a delta, crossing successive north–south lines of dunes representing previous coastlines, to push seawards at an impressive rate.

2.5 CHANGES IN HISTORICAL TIMES

Within historical times, that is a length of time varying in different parts of Italy from 2,000–3,000 years, changes in the physical environment have of course been gradual and limited. Some may be suggested, however, since they have affected man’s activities in the historical period, even if only locally and to a limited extent. In the first place there has been considerable volcanic activity (see Fig. 2.7a). Pompei and Herculanum were completely destroyed by Vesuvius in A.D. 79; the former by an ash fall and the latter by a mud flow up to 20 metres thick, which was much harder than the pumice ash. Four volcanoes are still active (see Fig. 2.7a). Associated in some cases with volcanic activity but generally with other movements in the earth’s crust have been numerous earthquakes of varying degrees of intensity. Virtually every part of Italy is susceptible to tremors but very serious earthquakes are more limited in occurrence (Fig. 2.7b). Apart from a few areas in the Alps and Liguria the worst earthquakes have nearly all occurred in the interior of the Peninsula and in eastern Sicily. Three very serious earthquakes of the 20th century are noted on the map and in 1962 the Irpinia area was again affected. The epicentre of the Messina earthquake in 1968 was in the Strait of Messina facing the town. It brought destruction or serious damage to almost every building in Messina and Reggio Calabria and caused the death of almost 100,000 persons in these two provinces alone. The widespread earthquake activity testifies to the youthful state of the landscape in which tectonic relief dominates in parts of the Peninsula.

Other activity that has changed the physical environment
in historical times has affected both the coasts and many interior localities. There is a marked tendency for many Italian rivers to build deltas. Some, including the Po, Arno and Tiber, have pushed seawards many miles. Inland, usually with the help of man, lakes have been drained or reduced. In the Alps steep slopes are widespread and avalanches frequently occur, and in the Apennines, as already noted, landslides occur widely in clay areas. Partly at least as a result of the removal of woodland and excessive ploughing of steep slopes, gullying has also been widespread in Peninsular Italy and Sicily and much land has been rendered permanently useless or made suitable only for gradual reclamation by afforestation.

2.6 WEATHER AND CLIMATE

Many north-west Europeans consider the climate of Italy to be one of its principal assets. There is undoubtedly some justification for this, but simply to consider that it is uniform throughout the country or always a good one for agriculture or a desirable one for tourists is misleading. Before discussing its principal features a number of points should be noted about the situation of the country. In the first place Italy occupies a mid-latitude position. The river Po runs close to 45°N, while south-east Sicily is only 37°N. This means that although Italy is well outside the tropics it is near enough in the summer months to have very hot conditions; not having the sun overhead is offset by longer days. Secondly, the position of the country in a maritime setting should be noted. Though virtually a closed sea, and therefore not influenced by currents from other latitudes, the Mediterranean is large enough to exert a considerable influence on the lands along its shores. Few parts of the Peninsula of Italy are more than 50 miles from the sea and only part of the Alps is more than 100. The presence of the sea is one reason why the annual range of temperature in the Peninsula and Islands is not very great. Thirdly, weather conditions are profoundly affected and greatly complicated in Italy by the presence of mountain areas and by the arrangement of these in relation to the movement of air masses. Temperature, of course, diminishes with increase of altitude and a map showing sea-level isotherms is misleading. In addition, mountains shut off valleys and basins from maritime influences and in places—the most striking instance being between the Riviera in Liguria and the Po
valley to the interior—remarkable climatic contrasts occur over short distances. Indeed the Alps, which are extensive enough and high enough to form a climatic region of their own, are also a major climatic divide between north-west and central Europe on the one hand and northern Italy on the other. The alternation of land and sea and of mountains and plains have contributed to give Italy a great variety of climatic conditions.

For much of the year Italian weather is only a little less changeable than that of north-west Europe. At the same time there is considerable variability from year to year, winters sometimes being much colder than average, sometimes much milder, and rainfall varying greatly in quantity and occurrence from year to year. The typical Mediterranean climate, with a hot summer and little precipitation, and a mild winter with considerable precipitation, does not occur widely in Italy; it is confined to the southern part of the Peninsula and to the Islands.

Italy’s weather is caused by the movement of air masses from various directions. From the Atlantic, mainly in winter, comes humid air, bringing widespread cyclonic rain; depressions tend to follow certain courses, altering their general west-east direction to pass south-east along either side of the mountains of the Peninsula. The depressions affect the South and Islands most profoundly in winter; in spring and autumn the North is more affected. Much of the rain comes from this source, but usually it occurs in short, heavy downpours.

During the winter the North comes under the influence of the margin of the continental anticyclone for considerable periods, with cold, dry, air extending from the interior of Eurasia into central Europe. It is this relatively cold air, coming into contact with the relatively warm, low-pressure area of the Mediterranean, that gives strong cold winds, the maestrale (mistral) in the west via the Rhone valley, and the bora at the head of the Adriatic. These are especially strong when depressions are passing. In general the Northern Lowland and the Alps themselves are unaffected by these winds and have long spells of still, cold, dry weather and clear skies. Mists are frequent in the lowland, especially in the vicinity of irrigated areas and the main rivers, and along the lagoon coast.

In the summer relatively stable conditions are established
over the cool, high pressure of the Mediterranean Sea and the humid Atlantic air masses rarely penetrate. Winds tend to come from the south-east and south, and the *scirocco africano* at times makes the summer in Sicily extremely hot. Very little rains falls in the summer in the South and Islands but summer rain increases northwards, and north of Rome is considerable, often coming in the form of short heavy thunderstorms. North of the river Po summer rain actually exceeds winter rain, a feature that by definition excludes a considerable part of Italy from the typical Mediterranean climate.

To these general movements of air and features of rainfall regime must be added many more local features. Mountain and valley winds occur in the Alps, onshore and offshore winds along the coasts. The alignment of mountain ranges and valleys, the presence of lakes, and so on, also produce local climatic effects. It is not surprising that any division of Italy on a climatic basis distinguishes several regions.

Fig. 2.9 shows mean temperatures for the coldest and hottest months, January and July, and the influence of altitude must be borne in mind. In January there is a striking contrast between the Northern Lowland (around 0° C, 32° F) and much of the South and Islands (generally over 10° C, 50° F, along the coasts); the difference in winter of 8° C, 14° F, between the Riviera and the Po valley over a matter of 80 km is remarkable. In contrast, in July the difference between northern and southern Italy is slight (23–26° C, 73–79° F), though the highest temperatures are still of course in the South and in Sicily. Clearly therefore the annual range is much greater in the Northern Lowland (mostly over 22° C, 40° F) than in the South (less than 12° C, 22° F in places). This contrast is the most marked feature brought out in a comparison of the two temperature maps and reveals a very hot summer everywhere except at considerable altitudes, but a much milder winter in most of the Peninsula and Islands than in the North, which is clearly more ‘continental’ in nature. Other features to note are the somewhat colder conditions (a matter of 1–2° C, 2–4° F) in winter on the Adriatic side of the Peninsula than on the Tyrrhenian side at the same latitude; the greater range of temperature in the interior of the Peninsula than along its coasts; and the greater range in the North Italian Lowland than in the adjoining mountain areas, a feature not easily discernible on the maps on account of complications of relief.
Monthly temperature figures for selected stations are given in Appendix 4.

Turning from averages to extremes, it will be appreciated that although not apparently differing greatly from the north in summer it is the extreme south that has the highest temperatures recorded: nearly 50° C, 122° F, in Sicily, which of course is under 1,000 km from the Sahara Desert. The lowest temperatures not artificially induced by high altitude, naturally, occur in the Northern Lowland, especially in the western part, —18° C, 0° F, having been recorded at Alessandria. Temperatures below 0° C, 32° F, do however occur in the Peninsula (lowest in Rome —8° C, 18° F, in San Remo only —4° C, 25° F) but do not generally last long. In December 1962, for example, many areas in the Western Mediterranean had temperatures well below freezing for a short spell and certain crops were damaged, and the whole winter of 1962—1963 was exceptionally cold throughout Italy.

Fig. 2.10 shows the main features of precipitation. This tends to increase with altitude, at least to a certain height, a feature clearly shown on the map. A number of other features may be noted. Annual precipitation tends to diminish from North to South. More locally, the Tyrrhenian side of the Peninsula is wetter than the Adriatic side due to its more frequent exposure to depressions from a general westerly direction. On the other hand, in the Alps and Northern Lowland, precipitation is greater in the east near the head of the Adriatic than in the west. Particularly heavy rainfall is recorded along the foot of the Alps and again in Liguria, but here more on the Riviera di Levante, which faces south-west, than on the Riviera di Ponente, facing south-east. In the mountains many valleys receive only a small fraction of the amount of rain falling on adjoining mountain summits: for example the floor of the Valle d’Aosta has only 400 mm (16 inches) while nearby mountain areas have 3,000 mm (about 120 inches). The wettest parts of Italy are found in the Alps and Northern Apennines, where over 2,000 mm (about 80 inches) is common, and in the mountains of the Peninsula, with over 1,000 mm (about 40 inches). The driest places are in Apulia, Sicily and Sardinia, below 400 mm (16 inches) being common; the driest place of all is San Pancrazio Salentino in the tip of the ‘heel’ — virtually desert — 200 mm (8 inches).

From Fig. 2.10 it is clear that the amount of rain falling in
the summer period diminishes from north to south. In the Alps and Lowlands north of the Po rain falls throughout the year, but more falls in the summer half. In most places here there are in reality autumn and spring maxima. Between the Po and roughly the latitude of Rome, the autumn and spring maxima

![Map of Italy showing mean annual precipitation](image)

Fig. 2.10 Precipitation.

still occur, but summer rain diminishes and winter rain increases. Only south of Naples and in the Islands is the winter maximum very marked; here the three summer months only have a negligible amount. In reality, autumn is the period in which Italy as a whole receives most rain; this follows a relatively wet summer in the North but a very dry summer in the South. Monthly rainfall figures for selected stations are given in Appendix 4.
ITALY: PHYSICAL BACKGROUND

Such marked differences in occurrence of rainfall in different parts naturally affect river regimes, which are very irregular in most areas, and differ from place to place. Perhaps the most striking feature of Italian rivers is the contrast between those originating in the Alps, which have a considerable, though variable, flow throughout the year, and those originating south of the Po, which, except for the largest, the Tiber, dry up completely or almost completely for anything from a few weeks to a few months. The rivers originating in the high Alps have a maximum flow in the summer, being fed both by the heavy rains and melting ice. Tributaries from the Pre-Alps that join these have maxima in spring and autumn. On the south side of the Po the rivers from the Northern Apennines carry very little water in the summer. The Po, which receives water from all these sources with their different regimes, has a more constant flow than any single set of tributaries. The discrepancy between a winter or early spring maximum and a summer minimum grows southwards, and in some parts of the South and Islands as much as 70–80% of the total comes in the first four months of the year. In the limestone areas drainage is of course different, and underground channels and caverns are widespread in both the limestone Alps and parts of the Apennines.

2.7 CONCLUSION

In this chapter little has been written about the connection between the physical environment and the various activities of man; neither about the many ways in which man, mainly in historical times and most spectacularly in the last few decades, has modified physical conditions. Nor have ways been suggested in which the physical environment sets limits to main activities beyond which it is impossible or not economically worth while to go, at least at present. The removal of forest, the construction of irrigation, hydro-electric and coastal works, these and other enterprises have all influenced physical conditions. In their turn rugged mountain areas preclude cultivation and make transportation difficult, while lack of rain in the summer makes cultivation difficult in the South, and so on. The physical and human landscapes are closely connected and usually inseparable. For this reason the various limitations set by the physical environment to man’s activities will be referred to where appropriate in later chapters.
Suggestions for Further Reading


Chapter 3

HISTORICAL AND POLITICAL BACKGROUND

3.1 INTRODUCTION

Among the present nations of Europe, Italy appears to be one of the most satisfactory in many respects. Its limits are mainly set by the sea and its land boundary passes along or near the crest of the relatively thinly populated Alps, apparently a physical barrier of the first magnitude, though in fact surprisingly often crossed in the past. In spite of the presence of French- and German-speaking minorities and other non-Italian communities, the Italian language is understood throughout the country, though it is superimposed on a large number of dialects, still widely used in rural areas and not all mutually comprehensible. The Roman Catholic religion, like the Italian language, is also virtually universal. Since unification a hundred years ago the general policy of Italian governments has been to encourage integration of the various parts by improving inter-regional communications, posting civil servants and military personnel as far from their home areas as possible, and so on, though under the Fascists restrictions, still theoretically in force, were put on inter-regional migrations, and until a decade ago Italians tended to migrate overseas rather than within the country.

The Italian nation, therefore, is now a reasonably cohesive political entity, and concern over its limits in Europe in the last hundred years has largely been over details. On the other hand, the absence of serious linguistic, religious and other problems has not eliminated strong regional consciousness and, in particular, a genuine, if undesirable and largely unjustified, dislike of the southerners by the northerners. This is one of the great social problems of modern Italy and is a relic of the complex and frequently changing political structure of Italy throughout the period between the collapse of the western Roman Empire and the 1860s. In contrast, the Italian language and the Roman Catholic religion, two of the unifying cultural features of modern Italy, have come (if not quite so
directly as might at first be imagined) from the relatively stable period of the Roman Empire itself, when Italy was, as now, all within a single political unit. To appreciate to the full the present geography of Italy, including both its current political and economic unity, and its great cultural diversity, it is therefore essential to know, if only in very broad outline, how Italy was peopled, the cultural influences that have affected it, and past political changes.

At first sight Italy appears to be a long narrow land almost forming a bridge between north-west Europe and North Africa, Greece and the Eastern Mediterranean. In practice it has not often served as such a link since for various reasons the contact with North Africa has usually been slight, while the link with the Eastern Mediterranean has been maintained by shipping services parallel to the Peninsula on either side rather than by land routes along the Peninsula itself (see Fig. 3.1a). Nor has the political situation often required the use of Italy as such a link, for either, as in the Roman Empire, Rome in the centre of Italy was a focus of routes, or Italy has been split among various units, each part of it having closer associations with neighbouring areas outside the Peninsula than with other parts of Italy itself. Nevertheless, since unification, and especially under Mussolini, there has been consciousness among Italians of the intermediate position of the country between the Western and Eastern Mediterranean and between Europe and Africa. But the Fascist dream of recreating an Italian (Roman) Mediterranean never came near to realisation.

3.2 Pre-Roman and Roman Italy

For simplicity Italian history before unification has been divided into three periods: the period before the rise of Rome, the period from about 200 B.C. to about A.D. 400, when Rome, first as a Republic and then as an Empire, dominated the area that is now modern Italy, and the period from about A.D. 400 to 1860.

Although there is much evidence of early man everywhere in Italy except in the high Alps, historical records begin only a few centuries before Christ in the South and virtually with

\[1\text{But for a time, for example, it served as a short cut for travellers from Britain to India, who went from Britain to Brindisi by rail and then by sea.}\]
Fig. 3.1 Historical maps.
Roman conquest in the North. It is clear however that for a long time before this Italy occupied a position on the margin of the civilised world of Southwest Asia and the Eastern Mediterranean, and its population and culture were influenced by these more advanced lands. Various technological innovations spread into Italy, mainly via the southern part of the Peninsula. Peoples moved into the area, too, especially from the east and north. One of the later periods of incursions occurred for example in the 4th century B.C., when Gauls from the north entered the country. By this time, however, the population of Italy must already have been large enough for new settlers to be absorbed by existing population rather than for them to move into completely unsettled areas.

In about 500 B.C. there were several reasonably distinct cultural groups (see Fig. 3.1b), though in some cases these overlapped, while in others new arrivals had settled alongside older inhabitants or relegated these to more remote interior localities. Among the groups at this time were the Etruscans, who originally occupied an area limited by the Arno and Tiber, but who subsequently spread both north and south; the Greeks, in what is now Calabria and the coasts of east and south Sicily; the Phoenicians and Carthaginians in Sardinia and west Sicily, and the Venetians and Messapians in Veneto and Apulia respectively. The rest of the Peninsula and the interior of Sicily were occupied by so-called Italians, while much of the North was in the hands of still different groups. At this time the South was orientated towards Greece and North Africa, and the rest of the Peninsula was more or less self-contained, while the North was subjected to frequent incursions from across the Alps.

Although agriculture was clearly the dominant economic activity, industry and trade were developed, especially in the South, and there were already some sizable towns here including Syracuse. Urban life had also developed in a limited way further north.

One of the cities of the Peninsula, Rome, founded on the Tiber by pastoralists in about 750 B.C. in a relatively poor part, agriculturally, had come to acquire some local importance by 500 B.C. In addition to its own territory, about 20 by 15 miles, it was associated with the adjoining Latini (Latins). After a slow struggle for local supremacy, Rome, from about 400 B.C. on, began a spectacular career of conquest and annexation which
by 200 B.C. had already given it control of most of what is now modern Italy, and had involved it in struggles with rivals outside as well as inside Italy, and culminated two centuries later in the establishment of the Roman Empire (see Fig. 1.1). This was a political unit in which Roman citizenship was extended to the inhabitants and which, broadly, kept the same form for about four centuries, during which Rome was the principal city. From about A.D. 400 on, although Italy theoretically remained intact for some time, the empire of the west ceased to be a single economic and political unit.

Italians are profoundly conscious of their heritage from Rome. Rightly or wrongly they see a close relationship between themselves and their ancestors, and scholarship in modern Italy has until very recently anyway been unthinkable without a sound classical background. The justification is that the language and religion of modern Italy and many features of Italian legal and administrative systems have come from Rome. At the same time the Roman Empire has left a physical impact on the landscape. Quite apart from the innumerable ruins, most of the larger towns of modern Italy are of Roman if not pre-Roman foundation, and a number preserve the Roman street plan. Some modern roads follow closely the course of Roman predecessors. Many plants, including wheat, the olive and the vine, have a prominent place in Italian agriculture now as then. But the Italy of the Roman Empire is separated from the present by such a long period and by so many changes that in fact many resemblances are superficial and comparisons with the past are misleading.

Before outlining the changes following the breakdown of the Roman Empire, during which the political and economic organisation of Rome, though never forgotten, was gradually submerged by ensuing chaos and subsequent new alignments, a striking contrast between Roman and modern Italy must be noted. Whether because it was nearer to the areas of early civilisation or because it offered a more favourable environment for the development of Mediterranean civilisation, the Peninsula was at first far ahead of the North in economic and cultural developments. After the North was colonised by the Romans, however, it drew roughly level with the Peninsula in the development of agriculture, towns and communications, but there was no suggestion at this time of the current superior position of the North.
3.3 ITALY FROM A.D. 400 TO UNIFICATION

Already in the 4th century A.D. the Roman Empire was often on the defensive, especially on its northern frontier, and after many compromises with the peoples beyond the frontier, who were permitted on occasions to settle within the Empire, serious incursions took place by the Visigoths from the Danube into the Balkans in 378 and by a coalition of various people from the Rhine into France in 406. These set a pattern for some two centuries, during which the Eastern Roman Empire remained intact while the Western Roman Empire, including Italy, was invaded and overrun again and again. For some decades the Western Empire also miraculously remained intact but after about A.D. 470 it was divided into many political units. Italy itself remained theoretically a unit for another century, for a time as the Kingdom of Italy under a barbarian leader, then as part of the Ostrogothic Kingdom and finally, for no more than a few years (563–8), as a territory recovered by the Eastern Roman Empire.

In 568–72 the Lombards overran part of Italy, making their capital at Pavia. In a sense this is the divide between Roman and modern Italy, for before this nothing new emerged to endure up to unification whereas from 570 on, in spite of changing shapes, sizes and alignments of political units, the pattern of pre-unification Italy began to emerge.

Italy was at first split into four parts (see Fig. 3.1c). The north went to the Lombards; an unwieldy area along the Rome–Ravenna axis stayed with the Eastern Roman Empire; much of the centre and south of the Peninsula were offshoots of the Lombard lands, and were centred on Spoletto and Benevento, two towns that still exist but are of modest importance today; what are now Apulia and Calabria, together with the two Islands, also stayed with the Eastern Empire. This arrangement lasted for about 150 years. During this period the character of the Empire changed appreciably, with Greek influence increasing; historians therefore refer to the Empire after this as the Byzantine Empire.

In the 8th century several new developments took place. The hold of the Byzantine Empire was reduced to Calabria and Sicily and the Lombard Kingdom extended its hold on the Peninsula. In the same period, two important new units appeared: the Papal States around Rome, and the trading centre
of Venice. In the south, Amalfi and Naples also emerged as independent units. In a matter of decades the Papal States had expanded along the Rome–Ravenna axis to stretch obliquely across the Peninsula from Rome to the Adriatic, but in the 9th century they were absorbed within greater units from the north.

After about 800, new influences were felt and new alignments took place. The Frankish Empire absorbed the northern three-fifths of Italy, while the influence of Islam, though making much less impact on Italy than on Iberia, was felt in the 8th century, as Sicily and Sardinia fell to North Africa. The raids of the Saracens were for long a burden to the coastlands of the Western Mediterranean. For some time a Kingdom of Italy existed, succeeding the Empire of Charlemagne, but it never controlled the whole of the country. In the 10th century Italy north of Rome became part of the Holy Roman Empire. Two new elements appeared in the 11th century, the Normans, who conquered the south of the Peninsula and Sicily, clearing out the Saracens, and Pisa, which emerged as a trading centre with control of Sardinia and later Corsica. In this century, too, Venice began to extend its influence.

Early in the 12th century the establishment of a line across the Peninsula took place, a boundary that remained almost continuously until 1860, dividing what is now the Centre from the South, and what was then the Holy Roman Empire from the Kingdom of Sicily. This line has been of great significance in subsequent Italian history. The lands to the south remained deeply rural and feudal right to the modern period, as the independent Kingdom of Naples with or without Sicily, and later as possessions of Aragon and then Spain. In contrast, the lands to the north, mostly loosely under the Holy Roman Empire, but frequently changing hands, saw in the later Middle Ages and Renaissance a spectacular development of agriculture in the reclamation of large areas in the North Italian Lowland, of industry, especially around Milan and Florence, of trade, culture and city life. Rome itself, after long bickerings within the Church, grew as a centre of European importance, and the Papal State re-emerged in the 13th century. Genoa, replacing Pisa in the 14th century, and Venice strengthened their position as trading centres and each acquired a string of footholds between Italy and the Black Sea to protect their trade. Very approximately between about 1200
and 1500, North and North Central Italy clearly drew ahead of the South and Islands. In the 16th century, growing domination by Spain and later Austria brought to a halt the remarkable progress made in the northern half of Italy and stagnation was shared with the South, which, however, never caught up. The great oceanic expansion of West Europe and the declining importance of Mediterranean trade, the innumerable quarrels between leading families and the failure of Italy to emerge, as Portugal, England, Spain, France and Holland had done or were doing, as a cohesive political unit at this period, contributed to leave it a political and economic backwater until the 19th century.

From what has been said it will be appreciated that almost every part of Italy changed hands several times between the fall of the Roman Empire and unification, yet at the same time many areas remained several centuries in the same political unit. Sicily was for some time under North African rule, the South was long linked with the Byzantine Empire, and most of Italy was at some stage after 1500 dominated by Spain, while France, Germany and Austria all played their part. Only with the Balkans (apart from the Adriatic coast) has contact been slight. In other words, each area has its own history, and no two have exactly the same.

Two features contributed to prevent Italy from losing its identity altogether. In the first place, at the fall of the Roman Empire, even in spite of deaths from violence, economic disruption and so on, its population was large enough and remained so to absorb newcomers and their cultures and to remain Latinised. Secondly, although apparently divided into numerous political units at any given time, these were not the watertight sovereign states of 20th-century Europe, in which movement of persons can be strictly controlled. If land tenure and a rural way of life were against large movements of people from one part of Italy to another, men of religion, merchants, soldiers, scholars and pilgrims were constantly travelling from place to place, and from the 12th century on the Crusades, in which Venice and other Italian powers participated, further stimulated the regional interchange of ideas and goods. Italy therefore survived through fifteen centuries of political chaos, ready to emerge as a modern nation.
3.4 THE UNIFICATION OF ITALY

When unification was talked of in the 18th century and finally actively fought for in the mid-19th century, the initiative came largely from the North and in particular from a relatively recent arrival on the Italian scene, the so-called Kingdom of Sardinia, based originally on Savoy but in reality on Piedmont, in the western part of the lowland. Fig. 3.2a shows Italy as it was on the eve of unification. As there had been virtually nothing in the way of an economic union to pave the way for political union, as occurred in contemporary Germany, and as there was appreciable opposition from the Church in Rome, the Austrian Empire and the politically stagnant South to unification under the crown of the Kingdom of Sardinia, it is perhaps surprising that in a matter of a year (1859-60) all but Venetia and the Rome area were unified, with the capital first in Turin. In 1866 Venetia was acquired from the Austrian Empire and in 1870 the Church ceased to be a political unit. After being in Florence for a few years the capital was transferred to Rome, an inevitable move in view of the place this city has in Italian history. Fig. 3.2b shows that during the period of unification, the Kingdom of Sardinia ceded Savoy and the Nice area to France, while Austria retained its 'window', Venezia Tridentina, on the south side of the Alps; this area was acquired by Italy in 1919. Istria was Italian only between the two world wars (see Fig. 3.2c).

Post-unification Italy started life as a monarchy (il Regno d'Italia), with Senators chosen by the King, and Deputies elected by all men over 25 with certain qualifications. It was run, therefore, on moderately democratic lines, and had a highly centralised unitary government in which the affairs of the State and the Church were not mixed. Italy's population of some 30m in 1871 was almost 100% Catholic. Although a few modern industries, based largely on imported coal, had been developed in some of the more enterprising political units of the North, the country was still very rural. Some railways had been built, especially in the North, and from 1860 on it was the policy of the government to weld the new country together with an extensive and complete rail system.

As Italy developed in the decades following unification, national prestige and respectability required colonies, and, like Germany, Italy joined in the scramble for Africa, acquiring
Fig. 3.2 Unification of Italy.
however only depressingly arid tracts in Tripoli, Eritrea and Somaliland, and failing to hold Abyssinia after ‘protecting’ it for some years in 1889–96. The contribution of the Italian colonies to the economic life of the mother country has been negligible both as a source of cheap tropical products and as places in which to settle Italy’s surplus population. This was at the time emigrating to the Americas in enormous numbers without furthering in any way the political prestige of the mother country. Even the final possession of Abyssinia during 1936–41 by the Fascist government was too late and short-lived to help.

Fig. 3.2d shows the Italian Empire at its peak, indicating also Italy’s European ‘possessions’, the Dodecanese Islands (1912) and Albania (1939). Italy was victorious in the First World War, gaining Venezia Tridentina and Istria. In spite of making further temporary gains, including Nice, in the Second World War, it suffered a setback this time, losing the Istria area to Yugoslavia and small areas to France as well as all its colonies in Africa; these now form three sovereign states, Ethiopia, Libya and Somalia. Far worse, of course, was the enormous damage caused in Italy itself during this war, especially between 1943 and 1945 when much of Sicily and the Peninsula served as a battleground, while the industries, railways and ports of the North were heavily bombed by the allies. Following the economic rehabilitation and political uncertainty in the immediate post-war years the new Italy, in spite of the previous setbacks, has expanded its industrial production in a single decade, the 1950s, by more than in the whole of its previous history.

3.5 INTERNAL POLITICAL DIVISIONS

Here it is opportune to say a little about the internal political divisions of Italy. After unification the basic units of regional and local administration were the province (provincia) and the commune (comune). In the 1870s there were 73 provinces, units broadly comparable in size, and in every case formed around a town of some importance, the capital. In this respect they differ from the older and more arbitrary English counties and more closely resemble the French departments, which were established during the French Revolution also around existing towns, even though they are named after physical features. After the First World War the new terri-
tories added to Italy were divided into provinces, while in 1926, 17 additional provinces were carved out of existing ones in the rest of Italy. This was done in provinces in which a second town had grown in importance and was considered to merit the status of province capital: for example La Spezia and Taranto, both important naval bases of post-unification Italy, became capitals of new provinces, as did Varese, a growing industrial centre near Milan.

At present there are 92 provinces (see Appendix 3). Their existence cannot be ignored in a study of the human geography of Italy since there is a great deal of useful statistical material relating to them and since they are also ready-made town regions, in most cases the province capital being easily the largest town in population and the focus of commercial as well as administrative life. Although they vary greatly both in area and in population (Milan has over 3m, Rome 2.5m, but the Valle d’Aosta only 100,000 and several others under 200,000) they are nevertheless extremely useful both for mapping data and for referring to in descriptive passages.

After unification, the historic regions of Italy were perpetuated or restored as groups of provinces without however having any administrative significance. These regioni (referred to under the Fascists for a time as compartimenti) as earlier noted (see Fig. 1.2d and e) bear a close resemblance to the Roman divisions of Italy, closer actually to those of a later period (Diocletian) than to those of Augustus. They are roughly comparable in size and historic significance to French and Spanish regional names such as Normandy and Andalusia, but in 1948, under the new post-war constitution, they acquired a recognised position in the administrative hierarchy and in 1953 a new law provided some degree of local autonomy for any of the the 19 regioni that chose to adopt it. So far only five of the 19 regioni, each in a particular way somewhat less Italian than the others, and each peripheral in relation to the national territory, have chosen to do so: Valle d’Aosta, Trentino–Alto Adige, Friuli–Venezia Giulia (only in 1963), Sicily and Sardinia. Although no momentous changes have resulted some have been made. For example Sicily allows

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1 Bolzano and Trento in Venezia Tridentina; Gorizia, Trieste, Pola, Fiume and Zara in Istria and on the Dalmatian coast.

2 In a few this is not so. For example, in Trapani province, Marsala is actually slightly larger than Trapani.
foreign oil companies to explore for oil whereas the mainland
does not. In government publications Bozen (German spelling)
is now written alongside Bolzano, recognition, presumably,
of the failure by the Fascists to Italianise this area. Since the
successful settlement with Yugoslavia of the Trieste—Istria
problem in the early 1950s only the Alto Adige (Bolzano) has
caused serious friction (see Chapter 9.5).

The move from a highly centralised unitary administration,
in which local government in its broadest sense has been closely
controlled from Rome, to some degree of regional autonomy,
even if not to a true federal organisation, is unusual at a time
when most governments in the world are becoming more
centralised.

The smallest unit of local government in Italy is the com-
mune. Altogether there are currently some 8,000 of these.
Immediately after unification there were considerably more,
but in the interests of more efficient administration much
amalgamation took place between the 1860s and the Second
World War. The trend has now been reversed and recently
some suppressed communes have been reconstituted. For
various reasons communes differ enormously both in area and
in population, and in areas in which they are very small, some
provinces (e.g. Turin, Bergamo) have over 200 communes,
while in areas in which they are large some provinces have
only 10–20 communes. Although the comparison is unrealistic,
it is as if only counties and parishes were still used in England,
and towns such as Birmingham and Manchester had the
status of overgrown parishes. In fact, the municipalities of such
large and prosperous towns as Milan, Rome and Turin are
bodies of considerable influence.

Space only allows a brief reference to the fascinating pattern
of Italian communes. Their variety is related to differences in
both size (area and population) and shape. Present size is
clearly influenced by past economic and social conditions and
regional differences in commune pattern are related to these.
Apart from the large towns, which have generally stretched
their boundaries to absorb adjoining communes (Rome is now
even comparable in size to many of the smaller provinces),
communes tend to be large in the South and Islands, which
are areas of highly nucleated settlement, and also in areas of
relatively new settlement, such as the eastern part of the Po
lowland. At the same time they tend to be large in extent,
Fig. 3.3 Commune patterns: a, Part of Etna. b, Part of the Val di Susa, Turin province. c, Traces of centuriation in Emilia-Romagna. d, Small communes around Bergamo. e, Medium-sized communes, Abruzzi e Molise. f, Large communes, Grosseto province.
though not in population, in thinly peopled parts such as the High Alps. In contrast small communes occur especially in areas of dispersed rural settlement and are characteristic in particular of the foothills of the Alps and parts of the Po plain adjoining these. The shape of communes is more obviously related to physical conditions, though sometimes cultural features, such as the Roman layout of settlement (centuriation), are reflected in angular-shaped units.

In Fig. 3.3 groups of communes from six different parts of Italy are drawn on the same scale. The first two show the influence of relief on the shape of the communes. In a, the circular cone of Etna (Sicily) is divided into segments running outwards from the crater down the sides and including in each unit a variety of conditions found at different altitudes. In b, an east–west valley floor in the Alps has most of the villages in the area, and the lands of most communities extend up the slope on one side or the other in relatively long, narrow strips. In c, relics of centuriation can be seen in the plain of Romagna (near Bologna), while d, e and f are included to show the enormous differences in size: d is the area around Bergamo, part in the foothills of the Alps, part in the plain; e shows communes of roughly average size in Abruzzi e Molise; and f very large ones in Grosseto province, southern Tuscany.

SUGGESTIONS FOR FURTHER READING

Touring Club Italiano: L'Italia storica, Conosci l'Italia series, Volume V, Milan 1961
H. Heander and D. P. Waley: A Short History of Italy, Cambridge 1962
R. Romeo: Risorgimento e capitalismo, Laterza, Bari 1959
V. Lutz: Italy—a Study in Economic Development, Chatham House, London 1953
Chapter 4

POPULATION AND SETTLEMENT

4.1 PRESENT DISTRIBUTION

According to the Census of 1961, Italy had in that year (15 October) 50,464,000 inhabitants. In 1861, immediately after unification, there were 22m inhabitants in a somewhat smaller area, 25.4m in the limits of Italy of 1961; the population of Italy has therefore almost doubled in the last hundred years. Currently the population of the country is increasing by about 0.5% per year.

Fig. 4.1 shows the present distribution of population in Italy mapped on the basis of density of population of the 92 provinces. With this relatively limited number of units a somewhat misleading picture is unfortunately created, with distortion of detail caused by the irregular shape of the provinces, but a more precise and accurate picture would necessitate study of the 8,000 communes. Further, it should be appreciated that while in many provinces a high density is due largely to dense rural settlement (e.g. Caserta), in some it is achieved by the presence of a large town (e.g. Rome, Turin) in an otherwise relatively thinly populated area. The scale of shading has been related to the density for Italy as a whole (168 persons per sq km in 1961) and on Fig. 4.1b it is easy to pick out areas of above and below average density.

Perhaps the most striking feature of distribution of population in Italy is the fact that although density varies enormously from one district to another there is no one limited part of the country with a large share of the total population. Areas of high density are numerous and spread fairly evenly through the country, a situation found among some other European countries, such as France and West Germany, but not in others, such as Sweden or Finland. Without trying at this stage to explain the distribution in terms of physical and economic conditions, the following concentrations of population may be noted, though they are not all obvious on a province basis: the largest continuous concentration is found in the North Italian Lowland and encircling hills and extends south-east along the coastal hill country of the Marche; a second extends along the coast of Liguria and into the Arno valley in
Fig. 4.1  Density of population in 1961. The main map is drawn on the basis of province data, inset a on data for the *regioni*. Inset map b shows provinces with a density above the national mean.
northern Tuscany; three occur further south, Campania, most of Apulia, and southern Calabria with northern and eastern Sicily. Rome itself also forms a large concentration of population (about 2m) but is located in an area of below average density.

The lowest densities are found in the Alps in general, in the higher parts of the Apennines, in some hill country of the Peninsula and Sicily, notably southern Tuscany, Basilicata and southern Sicily, and in Sardinia. The density of population actually ranges from 31 persons per sq km in the Valle d’Aosta to 2,061 in Naples.

Some more detailed features may usefully be noted here. In the Alps the higher parts are in reality virtually uninhabited, and most of the population is found along the floors or lower slopes of the main valleys. In the North Italian Lowland density is generally high, but far from evenly spread. Milan and Turin stand out clearly as major concentrations, while the rural density tends to increase from Piedmont eastwards to Veneto, but diminishes east of Padua. The lowest density is found along the lagoon area of the Adriatic coast.

In the Peninsula the mountain ‘core’ is generally thinly populated but contains many small densely populated valleys and basins. By no means all the hill country and lowland on either side of the Apennines is densely populated, as has already been noted, while many coastal lowlands have, at least until the 20th century, remained virtually uninhabited. The difference between Sicily and Sardinia should be appreciated. The two Islands are roughly comparable in area, but Sicily has more than three times as many inhabitants.

Unlike that of many countries, the Italian Census does not make a distinction between rural and urban population, but it is estimated in other sources that about 55% is urban. Since unification the percentage of urban dwellers has increased appreciably. Fig. 4.2 shows the distribution of larger towns in Italy in 1961. All communes with over 50,000 inhabitants and all province capitals, regardless of population, are mapped. In most of these communes the population of the actual centre (capoluogo) is not much below that of the whole commune, but in some parts of Italy characterised by extensive communes and a dense scattered rural population, the centre may have as little as half of the total population.¹

¹ This applies particularly in Emilia and Tuscany. At the time of writing only the total population of the commune was available for 1961.
Fig. 4.2 Distribution of towns. All province capitals are shown, regardless of their population. In addition, other communes with over 50,000 inhabitants are shown. The size of each circle is proportional to the population of the commune it represents. See Appendix 3 for population figures of province capitals.
In Fig. 4.2 it can be seen that while no large parts of the national area are without communes with over 50,000, there are clearly several clusters and several 'lines' of towns. Up to a point of course lack of or abundance of towns in different areas is related to distribution of total population. Thus the Alps, the Apennines and Sardinia have both a low density of total population and few sizable towns. The most marked concentration, in contrast, is obviously related to the densely populated North Italian Lowland.

In the Alps only Bolzano and Trento, located in the largest valley, have over 50,000. In the North Italian Lowland nearly all the towns over this size are in or close to the foothills of the Alps (especially from Como to Treviso) or of the Apennines (from Asti to Forli) but both Milan and Turin are some distance from the Alps, while some towns (Cremona, Mantua, Ferrara) are on or close to the river Po. Another 'line' of important towns extends along the coast of Liguria and into the lower Arno valley and includes Genoa and Florence. South of Florence, communes with over 50,000 are not so numerous as in the North, a fact that explains the large number of province capitals with under 50,000 between Florence and Naples. In the interior of the Peninsula the larger towns are mostly associated with relatively fertile valleys or basins. They do not patronise the Tyrrhenian coast between Leghorn and Reggio Calabria except at Naples and Salerno, but are more numerous along the Adriatic coast, while in the Islands all the larger towns are on or close to the coast. South of Florence, Rome and Naples overshadow the other towns of the middle section of the Peninsula.

4.2 Population Changes

While it is clear that the fortunes of different regions in Italy have changed considerably during the last 2,000 years it seems that very broadly the pattern has remained the same, although total population has of course changed, declining presumably after the fall of the Western Roman Empire and increasing steadily from the 18th if not the 17th century. Before the rise of Rome the southern part of the Peninsula was more densely populated than the rest of Italy, but subsequent Roman colonisation of the northern part of Italy eliminated this difference. During the later Middle Ages, with land
improvement in the North, the relative importance of the northern lowland increased further.

Since unification the population growth of Italy has been affected by the following factors: boundary changes have brought in (1919) and later excluded (post-1945) certain areas; an excess of births over deaths has resulted in a fairly steady natural increase which has however been reduced much of the time by substantial emigration both to neighbouring parts of Europe and Africa and to the Americas.\(^1\) Emigration in its turn has been offset by the return of many Italians; in some years, especially in the 1930s, more Italians returned than emigrated. Never since unification has there been a substantial movement of non-Italians into the country.

After allowing for loss due to emigration the rate of increase since unification has been between about 0.6% and 0.9% per annum except in unusual years, as in the wars. Currently it is 0.5%. It should not be overlooked, however, that the percentage increase is each year measured against a slightly larger absolute total. Assuming emigration remains unchanged therefore, the absolute gain will be slightly greater each year unless the gap between birthrate and deathrate closes even more.

Within Italy itself other factors have been causing marked regional and local changes in distribution. After unification inter-regional movement of population became possible even if obstacles were at times created to discourage it. At the same time, natural increase has throughout the period varied greatly from one part to the other, being generally highest in the South and Islands, lowest in the north-west.\(^2\) Further, emigration to foreign countries has not taken place uniformly (in proportion to total population) from every region. On the whole it has been most substantial from the South and Islands. Currently some 650,000 Italians are working elsewhere in Europe, mostly in Switzerland, West Germany, France and Belgium. In addition, there has been a steady increase in urban population as a share of total population due to the changing employment structure, resulting from the relative decline of

\(^1\) In general northerners have tended to emigrate to Europe, southerners to the Americas.

\(^2\) In Italy in 1956 the excess of live births over deaths was 8.5 per thousand. But contrast no difference in Piedmont and only 0.6 in Liguria with 15.4 in Campania and 16.0 in Calabria.
farming and the rise of industrial and other non-agricultural activities, established mainly in towns.

With all these influences at work simultaneously the full picture of change is extremely complicated. In the last hundred years the share of total Italian population to be found in the North has declined somewhat, due to the greater natural increase in the rest of Italy not being offset by the combination of greater emigration from the South both to foreign destinations and to the North. A comparison of Fig. 4.1b with Fig. 4.3a shows fewer provinces in the North with above average population in 1961 than in 1871. There has also been growing concentration of population in certain districts at the expense of others. Movement in the last hundred years has mainly been away from areas of relatively low density already, into towns, that is, usually into provinces already with a relatively high density. The movement has been both from rural areas to urban centres and from smaller urban centres to larger ones. There has also been appreciable resettlement of population in lands improved for agriculture, especially coastal lowlands. The gap has greatly widened between provinces of lowest and highest density, due largely to the spectacular growth of such towns as Rome and Milan.

Fig. 4.3b shows that in spite of an increase of 80% in the population of Italy as a whole in the last 80 years, the population of certain provinces has actually decreased absolutely. The slowest increase has been in predominantly rural provinces of the North, both in the Alps and in the lowlands, and in the predominantly rural mountain provinces of the Peninsula. The areas of increase in the North are largely associated with the presence of a large industrial centre (Turin, Milan) or port (Genoa, Venice). In the Peninsula, on the other hand, there has been a striking growth of population in two predominantly agricultural regions, Lazio and Apulia, as well as in Rome itself and in the Naples area. In view of its isolation, discouraging emigration both to other parts of Italy and to foreign countries, Sardinia's current above average growth may be attributed to a relatively high natural rate of increase.

Fig. 4.3d shows the last ten years of the period covered in Fig. 4.3b, and the trends suggested for the last hundred years are much more sharply marked here. Over one-third of the 92 provinces actually lost population in the intercensal period 1951–61; most increased by less than 6.2%, the national
Fig. 4.3 Population changes: a, Provinces with above average density of population in 1871. b, Mean increase for Italy as a whole over the period 1881–1961 was approximately 80%. c, Size of circle is proportional to increase in number of inhabitants of town it represents. d, Mean increase for Italy as a whole over the period 1951–61 was 6.2%.
average; and only a quarter increased by more than 62%. Nearly two-thirds of the total increase of 3m was concentrated in the four provinces of Milan, Rome, Turin and Naples alone.

The table below shows the communes that have grown by more than 200,000 between 1881 and 1961. In many cases the area of the commune has expanded in the period to include adjoining communes, but usually the areas absorbed were rural in 1881, and population growth has taken place in them since, so that for the purposes of a rough comparison of growth the figures are satisfactory. Reasons for the more rapid growth of certain of these large Italian towns rather than others will become evident in later chapters. Here the rapid growth of Rome, the national capital, and the slower growth of Naples, should be noted.

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<th>Population of commune in thousands</th>
<th>Absolute increase 1881-1961</th>
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<tr>
<td></td>
<td>1881</td>
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<tr>
<td>Rome</td>
<td>276</td>
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<tr>
<td>Milan</td>
<td>320</td>
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<td>Turin</td>
<td>250</td>
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<td>Naples</td>
<td>481</td>
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<td>Genoa</td>
<td>177</td>
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<td>Palermo</td>
<td>242</td>
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<td>Bologna</td>
<td>122</td>
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<tr>
<td>Florence</td>
<td>164</td>
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<tr>
<td>Catania</td>
<td>100</td>
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<tr>
<td>Bari</td>
<td>60</td>
</tr>
<tr>
<td>Venice</td>
<td>142</td>
</tr>
</tbody>
</table>

Between 1881 and 1961 the following (see Fig. 4.3) increased by over 100,000: Taranto (161), Verona (148), Cagliari (139), Trieste (138), Padua (128), Messina (127), Reggio Calabria (115), Brescia (109).

4.3 TYPES OF SETTLEMENT

Italian geographers have worked extensively on the geography of settlement and their research is greatly helped by the detailed information in recent Italian censuses on the distribution of population by size of settlement. A fundamental distinction is drawn between dispersed settlement (popolazione sparsa) and nucleated settlement (popolazione accentrata). A
further distinction is made between agglomerations according to number of inhabitants, but as much of the Italian agricultural population lives in centres with more than several thousand inhabitants, a classification of population into rural and urban is not easy. While for example Turin and Catania are clearly urban centres and the newly settled farming population of the Pontine Marshes is clearly rural, it is difficult to classify the many centres that are more than villages in number of inhabitants, services and appearance, but house mainly farm workers and do not serve other smaller centres, as proper service towns should.

Italy is characterised by a great diversity of rural settlement types, if its agricultural towns are included as rural. The explanation lies in the interplay at different times of a large range of influences: physical conditions directly affecting shape, size and siting of settlements; economic factors affecting the type of rural economy (grazing, for example, requiring a more dispersed type of settlement than, say, the cultivation of cereals or olives); socio-economic affecting land tenure, with small private farms encouraging dispersed settlement, large estates with a labour market requiring concentrations of population; and military (or defence) considerations, making a nucleated hilltop site desirable if not convenient economically for long periods in the past.

Predominantly dispersed settlement is most frequent in the North Italian Lowland and in the northern part of the Peninsula, but occurs in smaller districts among predominantly nucleated settlement around Naples and in Calabria and north-east Sicily. Away from the areas mentioned, nucleated settlement is predominant, in some districts to the almost complete exclusion of any dispersed settlement at all. In Sardinia, most of Sicily and much of the southern part of the Peninsula the villages or small agricultural towns contain over 90% of the population, and the countryside between is virtually devoid of dwellings. In parts of Apulia and Sicily nucleation of agricultural population reaches its maximum with most of the population living in centres of over 10,000 inhabitants, and with some centres of over 30,000.

In terms of the rural economy, Italian agricultural settlement is of three basic types, though these overlap and may occur side by side: the small family farm located on the land worked by its inhabitants and often owned by them; the larger
farm unit, with housing for farm labourers and farm buildings in the same locality; and the large village, housing farm workers but detached from the actual farm buildings.

Figs. 4.4–4.6 are designed to convey in a very simplified form some of the features of Italian rural settlement. Fig. 4.4 shows mainly physical influences at work. Map a shows parts of two valleys in the Eastern Alps. Settlement is mainly nucleated, since dwellings in the higher areas are only inhabited seasonally and most farm activity is centred on villages along or more often just above the floors of the valleys. There is an obvious tendency in the Val Sugana, as in east–west valleys throughout the Italian Alps, to locate the villages on the south-facing slope. Often an alluvial fan or a river terrace is used for the site.

Rural settlement in the North Italian Lowland ranges from sizable villages to large farms (cascine) and family farms. Map b shows settlement in the eastern part, where it is mainly nucleated. The line of villages running across the map is related to a line of springs emerging here at the southern limit of coarse material covering the plain. In the lowland in general, as in this example, the wide trenches of the main rivers are avoided. Otherwise the spacing of settlement is generally fairly regular, reflecting the widespread availability of water and of good farmland.

Fig. 4.4d shows part of the Riviera coast. The area consists of alternating small plains and valleys separated by high ridges running at right-angles to the coast. Much of the less steeply sloping land along the Riviera is now occupied by a string of towns and villages, continuous for miles in places, but in the difficult country behind settlements are small, often located on hilltops. Riviera conditions of settlement are repeated on a smaller scale elsewhere in Italy, as in the Sorrento Peninsula, wherever the coast is closely backed by a mountain area.

Fig. 4.4e shows some features of settlement in Southern Italy and the Islands. A north–south mountain range almost two thousand metres high separates the Mediterranean coast on the west from the Crati valley on the east. On the coastal strip, older settlements are at 100–200 metres above sea level, though newer settlements, since the railway, are on the coast. On the interior side there is a string of villages all at an intermediate altitude (around 500 metres) between the crest of the range and the floor of the Crati valley. As well as achieving
Fig. 4.4 Rural settlement patterns influenced by relief and drainage: 

a, Val Sugana, Dolomites. b, North Italian Lowland. c, Tyrrenhian coast and Crati valley, Calabria. d, Riviera coast, Imperia province. All maps are on the same scale.
TYPES OF SETTLEMENT

a relatively inaccessible position for defence purposes the settlements are in the best possible position to work the land above and below them. Often in the South, however, villages are sited on ridge-tops and the land they work all lies below. In the past coastal lowlands have been avoided not only on account of danger of attack from the sea but also because of the threat of malaria in ill-drained lower areas.

Fig. 4.5 attempts to convey differences in the size of settlement. Map a is an area in the hill country of the Marche. It consists of a number of ridges running south-west–north-east and separating valleys 100–200 metres below the ridge crests. Settlement is largely in the form of single dwellings and small hamlets (only suggested on this scale) with occasional small towns. It is typical of the flanks of the Northern Apennines and extends along the Adriatic coastal hills into the Abruzzi. Map b shows nucleated settlements in western Sardinia. These villages each have several thousand inhabitants; between them there are very few dwellings. Map c shows the densely populated rural area immediately north of Naples. Here massive villages have formed in an area of exceptionally fertile soils and virtual 'horticulture' in agriculture. There are many scattered dwellings as well. This mixture of villages and dispersed houses is characteristic of most very densely populated rural areas throughout Italy. Map d shows settlement on the western side of Milan. The centres to the north of Milan have grown with industrialisation in the last hundred years and are tending to merge and to form continuous built-up areas radiating from Milan. To the south-west, on the other hand, the earlier rural settlement with villages and large farms (cascine) remains much less affected.

Fig. 4.6 shows in greater detail selected small areas of rural settlement and is intended to illustrate the great variety of agricultural settlement types to be found in Italy. Map a shows a small community close by the main watershed of the Alps, at about 2,000 metres (only 2–3 kms to the west the land rises to nearly 4,000 metres). Buildings tend to be separated from one another, partly to avoid the danger of fire spreading. The highest buildings are only used in the summer. Map b shows an area of extremely dispersed settlement in the hill country of Tuscany. Farmers live close to the land they work even though they rarely own it. Map c again shows dispersed settlement, this time in an area
Fig. 4.5 Rural settlement patterns: a, Dispersed settlement in the hill country of Macerata province, Marche. b, Nucleated settlement in the Oristano lowlands, Cagliari province, Sardinia. c, d, Settlement in the lowlands north of Naples and west of Milan. All maps are on the same scale.
reclaimed from the sea. The buildings are strung out along dykes, raised some metres above the general level of the farm-land around. This pattern of settlement occurs widely along the Adriatic coast of North Italy. In map $d$ a somewhat similar, though this time more regular, arrangement of buildings occurs in the Pontine Marshes, reclaimed in the inter-war period. The *cascine* in map $e$ are small nucleated settlements dispersed at fairly regular intervals in many parts of the North Italian Lowland. Much larger, generally, are the villages of the South and Islands. Map $f$ shows a settlement with about 2,000 inhabitants in south-central Sicily, and the paths radiating from the village to the adjoining land worked by it. Where large nucleated agricultural settlements occur and workers have to make long journeys on foot to the more distant parts of the commune to work the land, there is a tendency, regardless of physical conditions, for the intensity of use of the land to diminish from the centre towards the periphery and for the more remote parts often to be seriously neglected. One aim of current land reform is to break up the large villages and plant secondary nuclei in intervening areas. This important aspect of Italian rural life is dealt with in M. Chisholm's *Rural Settlement and Land Use* (Hutchinson, London 1961).

In later chapters features of many individual towns will be discussed. Here therefore only some outstanding features of Italian urban settlements are mentioned. A very large number of modern Italian towns are of Roman or even pre-Roman foundation, though many for some length of time after the fall of the Roman Empire ceased to be towns in a functional sense even if they were not actually abandoned as settlements. A considerable number of the towns contain traces of their Roman predecessors, in some instances, especially in the North, in the form of a grid-iron street pattern, a layout used by the Romans for centres founded in areas of new settlement. Examples occur in Reggio Emilia, Pavia and Turin. Post-Roman towns less often have a regular street plan. The preference for hilltop sites has made an orderly street plan undesirable if not impossible in many towns of the Peninsula and Sicily as in Siena, Catanzaro, Agrigento. Some towns of more recent origin have a consciously planned layout of grid-iron form, but there is little to compare with the elaborate layout of many German towns of the last few centuries.

Italian towns tend to have a high density of population, the
Fig. 4.6 Rural settlement types: a, High valley in Alps of Valle d’Aosta (Breuil). b, Hill country of the Northern Apennines (province of Pesaro). c, Settlement on the fringe of the Lagoon of Venice. d, Pontine Marshes. e, Caccine near Pavia. f, Large nucleated settlement, Ioppolo, near Agrigento, Sicily. Maps are all on the same scale.
result of a preference in the past, most marked in the towns of the North and Centre, for buildings several storeys in height, and in the present century for tall blocks of flats rather than rows of single- or two-storey dwellings. Detached or semi-detached houses with individual gardens are very rare. Most moderate-sized and larger Italian towns consist of an old, highly individual central area and a ring around this of tall blocks of flats, sometimes continuing as far as the town limit, but often separated from the fields beyond by an untidy sprawl of small villas, not however housing much of the population. Many of the towns of Italy were ringed with a wall at some stage in the later Middle Ages or during the period of Spanish domination following this and almost always these have been demolished to form a boulevard (circonvallazione), separating the inner, older town from the growth of the last hundred years or so.

Fig. 4.7 illustrates some of the features of medium-sized Italian towns. Faenza, one of the settlements founded by the Romans on the Emilian Way, retains considerable traces of the Roman street plan. Lucca (Tuscany), too, has the remains of a Roman layout but was appreciably altered in the Middle Ages. It is one of the few province capitals to retain its old walls. Catanzaro (Calabria), like many towns of the Peninsula, has an irregular layout of streets and occupies a ridge-top site from which expansion has been impossible except northwards. Ragusa (Sicily) shows the contrast between the old town on a precipitous ridge-top and the modern town on a plateau to the west. The old town of Syracuse, like several along the coasts of the South and Islands, occupies a small island close to the coast and from this congested site has spread to the mainland. Grammichele is a large agricultural settlement in South Sicily, typical in size (population in 1951, 14,000), though not in layout, of many centres in the South and Islands. It was deliberately laid out as a hexagon when it was rebuilt after an earthquake in the 17th century.

SUGGESTIONS FOR FURTHER READING

M. Ortolani: La casa rurale negli Abruzzi, Consiglio Nazionale delle Ricerche, Florence 1961
Fig. 4.7 Street patterns in small Italian towns. All maps are on the same scale.
Chapter 5

TRANSPORT

5.1 INTRODUCTION

By the standards of the time Italy was excellently provided with inter-regional communications in the Roman Empire since the cohesion of the Empire depended on good contact with Rome, and routes converged on this centre. After the decline of the Roman Empire, inter-regional movements within Italy were not so necessary since new political units emerged, often more closely linked with areas outside Italy than with one another. Even so, travel and trade did take place in Italy, and Rome, in particular, thanks to its importance as a religious centre, was for most of the time a great centre of attraction. After unification the various regions of Italy were soon linked by railways.

Throughout the history of Italy certain physical features have played a part in influencing the layout of communications in the country. The shape of the country has made sea communications essential in linking the Islands to the mainland and desirable in linking different places on the long coastline of the Peninsula. Though the Mediterranean sometimes has bad weather conditions for navigation it was easier to navigate in the days of sailing vessels than the Atlantic Ocean. The Italian coastline, though without the estuaries so invaluable to sea transport in north-west Europe, has many small, sheltered inlets, suitable for sailing vessels if not for large modern ships. The virtual absence of tides has been an advantage in the construction of modern port works, an important advantage since most of Italy’s large ports are mainly artificially created.

On land, physical obstacles make road and rail construction difficult and costly in many areas. The Alps form a great barrier between northern Italy and north-west Europe. On the whole they have been less of a hindrance to determined military expeditions than to regular trade, since they can be crossed reasonably easily, at least in the summer months, if suitable preparations are made. The cost of transporting goods by trains of pack animals over the passes has always been high,
and even the motor roads built in the last few decades are tortuous and steep. In the last hundred years the Alps have been pierced by several rail tunnels, and currently tunnels are under construction or planned to carry roads and oil pipelines.

The Apennines form a lower, less continuous but still formidable barrier throughout the Peninsula, hindering transverse movement from coast to coast. By following valleys and using the lowest passes, however, roads and railways can cross the Apennines more easily than the Alps. Except along the Riviera of Liguria and the Tyrrhenian coast of Calabria, longitudinal movement is relatively easy in the Peninsula, both following the coasts and, by picking suitable combinations of valleys, basins and gorges, in the interior. The North Italian Lowland offers few obstacles to movement but the east–west Po is a difficult obstacle to negotiate in a north–south direction. In the Peninsula a very important line of movement, developed by the Romans as the Via Flaminia, ran almost due north from Rome to the Adriatic coast at Fanum (now Fano), providing the shortest link between the capital and the North Italian Lowland, along the southern edge of which it continued as the Emilian Way (Via Aemilia). The main railway and the modern road from Rome to the North Italian Lowland pass through Florence to Bologna.

In post-unification Italy the railways have been by far the most important single form of transport. With the development of the rail system, road transport declined, but has revived in the last thirty years and is currently gaining relatively, taking both passengers and goods from the railways, even though the absolute volume of goods carried by the railways has increased appreciably since the war. Coastal shipping has been of obvious importance in the maintenance of certain links, but apart from the lower Po, inland waterways have never been of more than slight and local importance; even the Po is not heavily used. Two other forms of transport may be noted: electricity transmission since about 1890, an inevitable accompaniment to electricity generation, and oil and gas pipelines in the 1950s. These are discussed elsewhere in the book.

5.2 RAILWAYS

The first railway in Italy was completed in 1839 from Naples to Portici and in the 1840s lines were built in Lombardy-Veneto under Austria and in the Grand Duchy of Tuscany.
In the 1850s, however, the Kingdom of Sardinia (Piedmont) made the most spectacular progress, building some 800 km of line, including one of the most difficult stretches of railway in the world at the time, crossing the mountains behind Genoa, to give Turin a rail link with the port. On the eve of unification in 1859 almost half the Italian route distance was in Piedmont and Liguria. There were four separate rail systems in the country but no lines at all south of the Naples area. Each of the largest towns had a link with a port. By 1870 the length was nearly three times as great as in 1860 (see Fig. 5.1) and the system spread over most of the mainland, though there were notable gaps, including a stretch between Genoa and the Arno valley. Construction continued rapidly until about 1895, after which the railway 'boom' virtually ceased, though the length of route has been increased since, especially with the construction of more direct lines between main centres (e.g.

![Map of Railways in 1859 and 1870]

Fig. 5.1 Railways in 1859 and 1870.
the Bologna–Florence direct, 1934). In 1870 the Italian system was still isolated from the rest of Europe except for the line to Austria via Trieste, but early in the 20th century there were already links with other parts of Europe by the Frejus tunnel (Mt Cenis, 1871), the Gotthard tunnel (1880), the Simplon tunnel (1906), the Brenner Pass, and along the Riviera to Nice.

Two important features of the Italian railway system should be noted. Firstly at an early stage the system was nationalised and has been run, virtually as part of the civil service, on semi-military lines, with great strategic importance and considerable secrecy. Secondly, it was one of the earliest rail systems in the world to develop electric traction. Already thirty years ago many difficult stretches of line, including the Riviera coast, Turin–Genoa, Rome–Sulmona and Naples–Foggia, were electrified.

Fig. 5.2 shows the Italian system in 1960. Gaps remain, especially in mountain areas, but the network is as complete as it will ever be, since the route length is now actually diminishing slightly. The Italian system carries almost as many passengers (in terms of passenger km) as the British and French systems though its total route length is appreciably shorter, but it only carries half the ton-km of the British system and less than a third of the French system. Passenger traffic is therefore more important, relatively, than in France or Britain. The lines shown in Fig. 5.2 are by no means uniformly efficient or heavily used. Most are State-operated but some are privately owned. Some lines are narrow gauge, especially in rugged areas. Only the busiest lines are double track, while, in contrast to Britain, quadruple track continues only for a few miles in the vicinity of certain towns. About half of the lines are electrified, including almost all the route with double track. The speed of both goods and passenger trains varies greatly from region to region, even on main lines. The average speed of the fastest scheduled passenger train over different lines gives an idea of the differences, even if it gives an exaggerated idea of normal passenger train speeds. The fastest line is Milan–Bologna–Florence–Rome–Naples. Express trains maintain 95–110 km per hour throughout. Somewhat slower is the Venice–Milan–Turin line. Single-track operating and difficult gradients and curves combine to reduce speeds greatly in the Islands (about 65 km per hour for the fastest) and in much of the Peninsula, as well as along the Riviera coast.
Fig. 5.2 Railways in 1960. To avoid confusion the coast has only been shown (by a dotted line) where not closely followed by a railway.
The Italian railway system is currently undergoing modernisation. Improvements include the doubling of many stretches of line: short stretches between Genoa and Pisa, between Milan and the Simplon tunnel and from near Naples (Battipaglia) to Reggio Calabria, and the electrification of many lines, including the line from Turin to Trieste, the Adriatic coast line south-east from Ancona, and the busiest lines in Sicily. Obsolete electric transmission equipment and locomotives are being replaced, steam traction replaced by diesel on lines not to be electrified, and heavier rails introduced widely to carry faster trains. Soon half of the total system of the *Ferrovie dello Stato* will be electrified and will be carrying 85% of all traffic.

Railway construction in Italy has encountered great physical obstacles in many areas and great feats of engineering have been performed. Several of the longest railway tunnels in the world are in the Alps and one of the longest, the Appenine tunnel, crosses the Northern Apennines. Steep gradients have often been negotiated, especially in the Alps, by tunnels that ascend as they curve through valley sides to emerge almost above the point they enter. Electric traction has greatly improved movement in the more difficult parts of Italy and has made very high speeds possible on lowland routes.

The heaviest long-distance passenger traffic in Italy is naturally between the major urban centres, but the greatest movement of goods is between ports and interior localities rather than along the Peninsula. The heaviest goods traffic passes from Genoa to Milan and to Turin. While all the major centres are foci of railway routes, Bologna is the key centre in the whole system, and links the North and the Peninsula.

### 5.3 Roads

The road system of Italy is so extensive that it is pointless to attempt to map it. The state (national) roads alone are longer than the railway route length and their general distribution resembles that of the railways (Fig. 5.2). There are also province and commune roads and these bring the total road length to about 180,000 km. Outside the main urban areas the network tends to be closest in areas of a high rural density with scattered houses and hamlets. In the areas with nucleated settlement a more open system is adequate. The closest network is found in Veneto and Emilia–Romagna, *regioni* in which dispersed settlement is common.
The distribution of motor vehicles in circulation gives an idea of the importance of road transport in different areas, and Fig. 5.3 shows the distribution of these among the regioni. Throughout Italy, urbanised communes are more motorised than rural areas but there is a great difference between regions. In relation to population, the most motorised provinces are the ones containing the largest towns of the North and Centre. Virtually all the Peninsula south of Tuscany, and the Islands, are well below average.

The road route distance is more evenly spread over the country than the vehicles and traffic is therefore much heavier in the North than in the South. Under the Fascists roads were
reconstructed and fine new roads built everywhere, but many in the South and Islands have remained hardly used to the present day. Every major settlement of importance in Italy is linked to a road system but many villages and hamlets in the South and Islands are still not reached.

For strategic as well as economic reasons a number of special roads, autostrade, were built in the inter-war period in the Milan area, between Genoa and the North Italian Lowland, and from Pisa to Florence. Since the war the old autostrade system has been improved and new routes have been built (see Fig. 5.3). Turin–Milan–Verona–Venice is the longest stretch open, but the Autostrada del Sole, Milan–Bologna–Florence–Rome–Naples–Salerno, should be complete by 1964. The Genoa–Milan autostrada carries a very heavy commercial traffic.

Rather than attempt to describe the complete road system it seems more useful to draw attention to some contrasting road patterns to be found in Italy. Fig. 5.4a shows an area in the Alps, part of the Adda valley (Valtellina) in the north (Sondrio province) and the heads of some smaller valleys to the south (Bergamo province). The principal road along the Valtellina follows the valley floor and minor branches climb to north and south to villages on the sides of the main valley and along small tributary valleys. As often in the Alps, a range (here the Orobian Alps) may be uncrossed for a great distance and areas on opposite sides linked only by very long detours. On the flanks of the Apennines and the adjoining hill country of the Peninsula, main roads often have to leave valley floors to reach hilltop towns and villages. Sometimes, as on either side of Stigliano (Fig. 5.4b) in Basilicata, they actually follow the crests of ridges to avoid badlands on the hillsides. Road distance often greatly exceeds direct distance between places as roads twist up and down the characteristically rugged hillsides. Fig. 5.4c shows an area of recent settlement on the flat recently drained Pontine Marshes. Roads, settlements and property boundaries have been planned together and a regular pattern has been created in harmony with drainage channels. Quite different is the pattern in Fig. 5.4d, characteristic of areas with large nucleated agricultural settlements. Minor roads and tracks radiate from each central settlement to the farmland around. Fig. 5.5a shows a particularly dense network in Emilia, in a district of particular interest because traces of Roman
Fig. 5.4 Types of road network: a, Valtellina (Sondrio province) and part of Bergamo province. b, Part of Matera province. c, Part of the Pontine Marshes, Latina province. d, Part of Bari province. All maps are on the same scale.
centuriation are clearly seen. Fig. 5.5b shows several instances of a commonly found feature of settlement in Peninsular Italy, the growth of new settlement on coastal and valley railways below the original hilltop towns and villages, and linked to these by a road. The station settlement is usually called Stazione di ——, while a new site on the coast may be called Porto di —— or Marina di ——.

5.4 SEA TRANSPORT AND PORTS

For its area Italy has a long coastline and, as in Britain, no part of the interior is far from the sea. Sea transport has therefore understandably played an important role throughout the history of the country. Modern Italy is now one of the great trading nations of the world and the volume of its trade has increased many times in the last few decades. This has been stimulated not only by the sheer growth of the Italian economy
but also by the opening of the Suez Canal in 1869, putting an end to the backwater nature of the Mediterranean, and by the development of an overseas empire in Africa. Italian shipping routes are worldwide in extent, reaching to almost every major world port.

Italy has a large number of ports, most of them in use at least since Roman times. Many, however, are small in capacity and handle mainly or entirely coastal traffic, while a large share of the international traffic is concentrated in a small number. In 1960 the international traffic of Italian ports came to over 70m tons of goods (59m imports, 11m exports) while coastal traffic amounted to 31m tons loaded and unloaded. Fig. 5.6 shows international traffic and the smaller map coastal

\[ \text{Fig. 5.6 Seaports.} \]
traffic. Of the total of 70m tons of international traffic Genoa (16m), Naples and Venice (each 6½m) together accounted for over two-fifths of the total. Coastal traffic is somewhat more evenly distributed among the ports.

The nature of goods handled varies greatly from port to port and the picture varies according to whether value or weight of goods is considered. Crude oil and refined products account for about half of the weight of imports and nearly the total weight of exports, coal for about one-sixth of imports. These and certain other items are of low value in relation to their weight and also require less complicated port facilities than manufactured goods and many food products. As indicated in Fig. 5.6, oil accounts for virtually all the international traffic of Falconara, Augusta and Bari, and over half that of Ravenna, Leghorn, La Spezia and Naples; Savona handles mostly coal. On the other hand Genoa, Venice and Trieste deal with a much wider range of goods. The volume of Italian oil imports has increased about ten times since the late 1930s and the recent fortunes of Italian ports have been closely related to trade in this commodity.

Genoa is unquestionably the principal port of Italy, unrivalled in its facilities and in the quantity, value and variety of goods handled, and rivalled only by Naples as an international passenger port. Its chief drawback is lack of land for development and this is one reason for the parallel growth of Savona to the west and of La Spezia to the east, both close to Genoa. Like Genoa, Venice handles a wide range of goods, but its hinterland is not so highly industrialised. Trieste is the only Italian port with a large part of its hinterland outside Italy (mainly in Austria). In the Peninsula, Naples is the principal port.

5.5 AIR TRAFFIC

Like the seaports, the more important Italian airports handle both international and national traffic. The movement of goods by air is so slight that it may be ignored, but the movement of passengers and mail is great and is growing fast. In no more than five years (1955 to 1960) there has been a threefold increase both in the number of passengers on international air services arriving in and leaving Italy, and in the number of passengers carried on internal air routes.¹ On

account of the growing size and more extensive landing and take-off requirements of aircraft serving international air routes the bulk of this traffic is concentrated in a few Italian airports. Intercontinental air routes confine their activities almost entirely to Rome and Milan. Shorter distance international services link other European centres with Naples, Treviso (for Venice) and Turin as well as with Rome and Milan. Even so, 60% of all international passengers landing in or leaving Italy use Rome’s Ciampino airport,\(^1\) while almost another 20% use Malpensa airport, Milan. Rome is also an important stopping place for through air services from north-west Europe to many parts of Africa, South and East Asia and Australia, and it accounts for most of the passengers in transit.

In the internal airways system Rome is the principal focus of routes and most services are in fact between Rome and some other centre. In view of the excellence of express passenger train services in the northern half of Italy it is not surprising that here the busiest air services are mainly from Rome to Milan and Turin, whereas in the southern half Rome has busy links with several smaller, less-accessible centres in the Islands (Palermo, Catania, Cagliari, Alghero for Sassari) and the South (Bari).

**Suggestions for Further Reading**

A. Crispo: *Le ferrovie italiane*, Milan 1940


\(^1\) Since this section was written, the new Leonardo da Vinci airport at Fiumicino near the mouth of the Tiber was completed. It now handles all principal services. The airport is some 35 km from the centre of Rome.
Chapter 6

AGRICULTURE, FORESTRY AND FISHING

6.1 INTRODUCTION

Before turning to the geography of agriculture in Italy it is necessary to consider briefly the place of this activity in the economic life of the country. Throughout the period since unification, if not for longer, employment in agriculture has steadily diminished as a proportion of total employment. It has decreased from about two-thirds a century ago to 40% in 1951 and little over 30% in 1961. Currently about 6 million persons are employed in agriculture, almost as many in mining, manufacturing and certain service activities closely resembling manufacturing, and about 8 million in service (non-goods) activities.

The share of the gross domestic product accounted for by agriculture, about 17.5%, is appreciably smaller than its share of employment,¹ and has dropped from 33% in 1948. To some extent this is an unfair assessment of the relative importance of agriculture, but it is largely a reflection of the lower efficiency of persons employed in agriculture than in most other activities and from the point of view of the economist gives a fairer picture of the contribution of agriculture than the 30% for employment.

In terms of area occupied, on the other hand, there is no comparison between agriculture and other activities. Most of the surface of Italy is used for cultivation, grazing or forestry, while mining, manufacturing, ports and other transport facilities, offices and commercial premises, though lavish in their use of land in certain localities, cover between them only a tiny fraction of the total surface and when mapped on a small scale are no more than points.

Although agricultural land and forests cover most of Italy and persons employed in agriculture and forestry are dis-

¹This is not so in the United Kingdom. Here the efficiency of labour is high in agriculture and this activity accounts for about 4% of both employment and of gross domestic product.
tributed more uniformly over the national area than persons engaged in other activities, the relative importance of agriculture in the economy varies enormously from province to province. Fig. 6.1 shows the distribution by provinces of persons employed in agriculture in 1960, and although there are obvious regional differences, the general regularity of spread contrasts fundamentally with the adjoining map showing persons employed in mining and manufacturing in 1961. The relationship of the two is shown in the smaller map, which demonstrates clearly that in terms of employment (and even more, therefore, in terms of value of production), industry has a dominant position in much of north-west and north-central Italy but almost everywhere south of the Arno valley agriculture is the dominant activity. In a few provinces in the South (but not in the Islands) agriculture still accounts for over 50% of all persons employed and, much more surprisingly, even in Asti and Cuneo provinces, just next to the great industrial centre of Turin. The contribution of agriculture to total province income is shown in Fig. 6.2 and brings out again the contrasts. The least dependent on agriculture are Trieste (1%), Milan (2.4%) and Varese (3.1%), while the most dependent are Campobasso (47%) and Rieti (46.2%) in the central part of the Peninsula.

6.2 PHYSICAL CONDITIONS AFFECTING AGRICULTURE

Although the physical background has already been discussed briefly, it is necessary here to pick out and emphasise those features that affect agriculture favourably or adversely in Italy.

Thanks to the relatively low latitude of the country, low temperatures and a short growing season are not an obstacle in agriculture except at altitudes above about 1,500 metres. In these relatively limited areas other adverse factors such as steepness of slope and thin, infertile soils virtually preclude agriculture anyway. Elsewhere temperatures are high enough to allow the commercial cultivation of many warm temperate crops, while even ‘sub-tropical’ plants such as cotton and citrus fruits are grown in the South and Sicily. The occurrence of frosts (see Fig. 6.3) does of course preclude several important plants from the North and the higher areas of the Penin-

1 At the time of writing 1961 figures were available only for industry, not for agriculture; the 1960 figures for this are estimates.
CONDITIONS AFFECTING AGRICULTURE

Rice and maize mature easily in the Northern Lowlands, barley and potatoes near the upper limits of cultivation in the Alps.

Precipitation, or rather lack of it, and not temperature, is the great climatic obstacle to cultivation in Italy. Fig. 2.10 shows mean annual precipitation and Fig. 6.3 its occurrence by seasons. Mean annual precipitation ranges from well over 2,500 mm (100 inches) in parts of the Alps to under 500 mm (20 inches) in many lowland areas of the South and Islands. If it occurred at the right season, precipitation would be adequate for some kind of cultivation almost everywhere, but
Fig. 6.3 Physical conditions affecting agriculture.
in the southern half of Italy very little falls in the summer period and much in the cooler part of the year, and its occurrence is therefore out of harmony with the growing season. Fortunately the spring and early summer temperatures are high enough to allow some crops, including wheat, to mature and be harvested before the onset of dry conditions, but once the dry season sets in, the cultivation of field crops virtually comes to a standstill and, under the scorching summer sun, conditions are much more reminiscent of the semi-desert of nearby North Africa than of north-west Europe. The advantage of the olive, the vine and other tree crops that can survive and even flourish under the drought can well be appreciated.

As summer rainfall increases northwards, so field crops become more easy to grow throughout the summer period. This is fortunate in the North Italian Lowland where winter temperatures are much lower than in the South and the heat of the warmer months must be used. Although summer rainfall is considerable in the North it is still a great advantage to irrigate where the continued flow of water in the rivers from the Alps can conveniently be diverted to the fields. Maize matures successfully and gives good yields under normal rainfall conditions in the northern half of Italy, but rice is grown only on irrigated lands. These two crops are virtually precluded from the southern half of the country on account of insufficient rainfall, even though the growing season is adequate. There are places in the South and Islands where reservoirs could be built to keep back the winter rain for use in the summer months but for various reasons only limited areas could be irrigated.

Even more restricting to agriculture in Italy than lack of precipitation are unfavourable conditions of relief. Broadly these are related to steepness of slope, but sheer altitude and accompanying unsuitable climate, particularly in the Alps, also play a minor part. Only one-fifth of Italy consists of plains and here, naturally, steep slope is rarely a problem except very locally; complete absence of slope, indeed, has been more of a problem in many coastal plains, which have remained ill-drained until recently. In the remaining four-fifths of Italy, half of it hill country, half mountain (see Fig. 2.1), there are of course plateaux and gently sloping areas, but a depressingly large proportion of both main types of relief is either steep
enough to make cultivation difficult in some way, so steep that cultivation is extremely precarious, or simply too steep to serve as anything but forest land or poor pasture. Steepness of slope not only makes ploughing and therefore the cultivation of field crops difficult but under many land-form conditions makes soil erosion and gullying a constant danger, especially since throughout Italy rain tends to fall in heavy downpours. The advantage of terracing on steeper slopes is obvious and the general need to have small fields can be appreciated, but both these features greatly limit the possibilities of introducing mechanisation. On steep slopes, as under conditions of summer drought, the advantage of tree crops is clear. It must be appreciated that steep slopes are not confined to places above a certain altitude but occur widely throughout the zone of hill country and are especially serious in the areas of relatively loose sandy material and in the clay areas of the Apennines.

A further physical factor affecting Italian agriculture is condition of the soil (see Fig. 6.3). To fit Italy into the broad soil zones of Eurasia is meaningless on account of the large proportion of mountain area. The bewildering variety of soils, if mostly basically brown deciduous forest soils, are clearly related in many places to underlying rocks or have been deposited relatively recently, and are best understood on this basis. The areas of Quaternary deposits, the North Italian Lowland and the coastal plains, as well as many Pliocene basins in the Apennines are generally fertile, though, as to the north of Milan, they include infertile tracts of gravel. The lower slopes of Vesuvius and Etna are particularly favoured by fertile volcanic soils as are adjoining lowlands with soil derived from these. The clays widely found in the hill country of the Peninsula and Sicily are generally associated with tolerably fertile soils but as already noted are particularly susceptible to soil erosion. The sandstone areas, widespread in the Northern Apennines, give less fertile soils, while the limestone areas, except where terra rossa occurs, as, especially, in Apulia, are definitely infertile and, together with the schists and granites of Calabria and Sardinia, and the volcanic deposits of Lazio, are among the least promising areas agriculturally.

Altogether, then, for one reason or another, physical conditions do not generally favour agriculture outside the North Italian Lowland. Other areas that may be called favourable
without serious reservations are restricted in the Alps to certain valley floors, in the Peninsula and Islands to limited coastal plains and interior basins or to areas of special soils as around Naples and in Apulia. The prospects of radically altering the situation seem very remote at present, though locally there is scope for considerable improvement. On the other hand, the North Italian Lowland, once settled and improved, initially around its margins, but later towards the lower central part, and finally almost to the Adriatic coast, has been one of the best areas of farmland in Europe. Its agriculture was highly praised by English visitors in the 18th century, and its great fertility and high yields noted.

From what has been said it will be appreciated that great differences occur in the value of agricultural production per unit of area from one region of Italy to another. While these are broadly related to physical conditions they are to some extent connected also with differences in land tenure and in varying amounts of effort in different areas to improve yields by the use of fertilisers, mechanisation and other modern practices. Fig. 6.4a shows the value of production from the agricultural and forest land, per hectare. Provinces in the North Italian Lowland stand out clearly as the most productive, those in the Alps, Liguria (due to the inclusion of large areas of low value forest), much of the Peninsula and Sardinia as the least productive. Fig. 6.4b shows the contribution of each regione to the national total in 1958, Fig. 6.4c the same as map a, excluding forests, for the regioni in 1958 and Fig. 6.4d the value of output per inhabitant.

A comparison of Fig. 6.4 with Fig. 6.1 suggests that the Northern Lowland has a larger share of the value of agricultural production than of the labour force and therefore achieves higher productivity per worker. This is confirmed in Fig. 6.2 (inset map). It is a result, largely, of the more fertile conditions, but is partly due to more widespread mechanisation. Emilia–Romagna and the Marche emerge as the most favoured in terms of value of agricultural output per inhabitant (as opposed to per farm worker), but whereas the lower value per inhabitant is adequately compensated for in Lombardy, Piedmont and Liguria by industrial production, in most regioni of the Peninsula the low value of agricultural production is not substantially supplemented by other productive activities.
Fig. 6.4 Value of agricultural production.
LAND TENURE

6.3 LAND TENURE

An appreciation of the problems of Italian agriculture would not be complete without some knowledge of the question of land tenure, since large-scale land reforms, inaugurated by laws passed in 1950, are now in progress (see Fig. 14.5, inset map, for the location of land reform areas). Two main aspects of land tenure, closely connected, are of particular geographical interest: the size of farm properties and their ownership.

Since Italian farms vary in size from one to several hundred hectares the average size has little meaning. Fig. 6.5 merely shows the areas in Italy in which the predominant type of farm is very small, of moderate size or large. In each area, all sizes are of course to be found. A comparison with Fig. 4.1 (density of total population) or Fig. 6.1 (distribution of persons engaged in agriculture) shows that the areas with larger farms coincide with thinly peopled areas such as the higher parts of the Alps and Apennines, the volcanic hills of South Tuscany and Lazio, and Sardinia. The smallest farms are equally obviously related very broadly to areas of dense rural population. Though affected also by type of ownership (as towards the mouth of the Po, where large properties occur in a relatively densely populated area) the size of farm is related mainly to the quality of the land farmed.

Fig. 6.5 shows in a greatly simplified form the main types of land ownership before recent reforms. There are four principal types of ownership: the so-called capitalist holding, usually large in extent, in which the owner employs labourers while he himself runs the farm or even hires a manager to do so for him; the mezzadria system (share cropping) whereby the owner and the worker each take an agreed share of the value of production; the system of tenant farmers, whereby each farming family pays an agreed rent to the owner for the land it works and makes what profit it can above this; and the owner-operated or private family farm. In Fig. 6.5 the two latter types are not distinguished. In the first three types of holding the owner generally speaking does not actually work on the land as a labourer though he may participate in management and take an interest in improvements. In the fourth the owner and his family work their land and, obviously, have very direct interest in it.

Contrary to widespread belief, the large capitalist estate is
not confined to the South but is found widely throughout Italy. It is generally considered inefficient economically and unsatisfactory socially, creating an unstable 'market' in agricultural labour, and has been the chief target of land reform. The *mezzadria* system, dominant in the northern part of the Peninsula and in much of Emilia–Romagna, may be criticised socially since there is clearly great dissatisfaction among the farm workers, who are obliged to give a certain part of what they produce to the owners, and the dissatisfaction appears to be expressed by these peasants in massive support of the Communist Party. The tenant system is more satisfactory and the private family farm the most satisfactory of all, though through inheritance in many areas family farms have over time been subdivided, becoming very small and often fragmented, so that a farm may include a number of small parcels of land at considerable distances apart.

The general policy of land reform in Italy has been to reduce the size of large holdings and to amalgamate small ones to arrive at a moderate-sized unit compatible with local farming conditions and practices and related to density of population, but designed to give the optimum balance between productivity per worker and per unit of area. Most of the land reform has been conducted in certain designated areas and has not been confined to areas of capitalist estates, some of which, as in southern Lombardy, have not been included in the reform areas at all on account of their great efficiency. While reform has been aimed at changing the size of holding it has also given the farm workers a more direct interest in the land by distributing this through ownership changes. A recent F.A.O. study\(^1\) concludes that productivity of both land and farm labour has increased substantially in many areas of land reform.

6.4 LAND USE

Nine-tenths of the surface of Italy is put to some use for agricultural or forest purposes, a small area is occupied by non-agricultural activities and settlements, and only a few per cent is admitted to be entirely useless. This chapter is concerned with the 90% that is used for some productive purpose based on the soil. The 90% is divided into four main types of land

use: land under field crops, land under tree crops, pasture land and forest. To some extent these overlap, a feature that must be explained at this stage. Tree crops such as olive and fruit trees may be the only form of agriculture in a given piece of land (*coltivazione specializzata*) or they may be grown alongside field crops (*coltivazione promiscua*) serving as field boundaries or actually growing in rows among field crops, sometimes sheltering them. The field crops include plants that are grown solely for animal feeding, such as grasses and lucerne, as well as plants such as wheat and rice; sometimes therefore they are used as pasture, though usually in Italy livestock in such areas is stail fed. The third category, pasture, is therefore mainly poor quality grazing land in areas in which cultivation is not possible or worth while, though it includes some very productive meadows in the North Italian Lowland; some areas of ‘forest’, and even some areas in which tree crops are cultivated, may also provide pasture. The fourth category, forest, is a flattering term for much of the land under trees in Italy, and extends to the miserable, commercially very poor, maquis, typical of the drier parts of the Peninsula. It also includes areas of good quality timber, especially in the Alps, and chestnut woods, widespread in the Northern Apennines and an important source of food. Figs. 6.6 and 6.7 show the distribution of the four main types of land use, each expressed as a percentage of the total area, not of the agricultural/forest area, of each province.

Of the total area of Italy 45%, and therefore half of the agricultural/forest area, is under field crops (the total includes some fallow). Fig. 6.6 is basically self-explanatory but a few points may be stressed. The range is between 1.5% in Sondrio province, entirely in the Alps, and 81% in Cremona, entirely in the North Italian Lowland. The North Italian Lowland, the Adriatic coast lands to Gargano and the interior of Sicily are well above average.

Fig. 6.6 shows the specialised cultivation of tree crops. Of the total national area 8.5% is an impressive proportion for this type of cultivation even if small compared with the proportion under field crops. Several provinces in the northern half of Italy have under 1%, but in Brindisi the extraordinarily high figure of 65% is reached. Apulia is clearly the outstanding area of specialised tree crops on account of its concentration on both the vine and the olive, but Sicily, especially Trapani
Fig. 6.6 Distribution of field crops and tree crops in 1959.
Fig. 6.7 Distribution of permanent pasture and forest in 1959.
province in the west, also stands out, and certain areas in the
North, especially Asti province, may also be noted.

Fig. 6.7 shows the distribution of pasture and of forest. The
outstanding areas of natural pasture are the Alps and Sardinia.
The forests are somewhat more evenly distributed but there
is virtually no forest at all (under 1%) in southern Sicily and
Apulia and in most of the North Italian Lowland. The dis-
tribution of pasture and forest is associated mainly with areas
unsuitable for the cultivation of field or tree crops, being in
areas of either poor soils or steep slopes or both. Owing to
the long and intensive use made of the land in Italy neither the
pasture nor the forest is strictly natural now. Both have been
interfered with by grazing, clearance for timber and in other
ways, and much of the forest is later spontaneous growth or
has deliberately been planted.

6.5 FIELD CROPS

Of the total area of Italy under field crops, about 40% is
under crops grown for animal fodder, about 35% under wheat
and nearly 10% under maize. Not much of the total area is
left for the remaining crops, the most important of which,
roughly in order of area occupied, are beans, oats, potatoes,
sugar beet, barley and rye. The fodder crops are considered
in section 6.7, under livestock farming.

If fodder crops are excluded, cereal farming is the outstand-
ing branch of arable farming in Italy. Wheat is grown on
nearly two-thirds of the area under cereals but accounts for
only about half of the weight of grain harvested. Wheat yields
in Italy as a whole average under 20 quintals per hectare,
maize about 30 and rice over 50. In terms of quantity of
grain per unit of area, therefore, maize and rice are superior
to wheat. Oats and barley, which yield under 15 quintals per
hectare, are confined mainly to areas in which soil and
climatic conditions are not favourable for wheat. With all the
cereals there is a very sharp contrast in yields between the
North Italian Lowland and the southern half of the country.
This is brought out for wheat and maize in Fig. 6.8b and d.

Fig. 6.8a shows the relative importance of wheat cultivation
in the arable (field crop) area of each regione. Two main types
of wheat are grown, soft wheat (tenero) and hard wheat
(duro). Soft wheat, grown throughout Italy, occupies over
two-thirds of the wheat area; hard wheat, confined almost
Fig. 6.8 Distribution of the cultivation of wheat and maize, 1959. Each circle in maps a and c is proportional in size to the area under arable (field crops) in the regione it represents.
entirely to the southern half of the country, is of special interest
because it is the basis for pasta (spaghetti, maccaroni, and so
on). Though not obvious from Fig. 6.8a, the great wheat
belt of Italy extends along the hill country of the Adriatic
side of the Peninsula and, missing Calabria, reappears in
interior Sicily. The crop is more limited in importance in the
North where rice (locally) and maize (widely) are also culti-
vated. Although it is considered worthwhile to cultivate wheat
throughout Italy, yields vary greatly, and it is ironical that
in Lombardy, where about 35 quintals per hectare can be
expected, it is generally more profitable to grow other crops,
while in much of the South and Islands, where often only
about 10 quintals are obtained, it is the staple crop. Natural
conditions rather than a greater amount of labour or fertiliser
make the yields in the North so much higher.

Wheat bread and pasta are major items of diet in Italy, and
to assure that most if not all the wheat consumed is produced
at home it has been grown, particularly during the Fascist
‘battle for grain’, in unsuitable areas; currently some is im-
ported. In Italy itself there are areas of marked surplus and
deficit. The area already described as the main wheat belt
has a surplus almost everywhere except in Sicily. Areas with
a deficiency occur in the Alps and industrial north-west and
in the highly urbanised provinces of the Peninsula.

Maize only occupies about a quarter as much land as wheat
but gives half as much grain. Two main varieties are grown in
Italy, ‘Italian’ (nostro)\(^1\) and hybrid. The Italian variety is
much more widely grown but gives much lower yields than the
hybrid. Grain maize is used both for human consumption,
especially as polenta in Veneto, and for animal fodder. The
main area of maize cultivation lies in the lowland north of
the Po, with maize increasing in relative importance eastwards
as precipitation increases, and accounting in Friuli-Venezia
Giulia for one-third of the arable land. It reappears in suitably
humid parts of the Peninsula, notably in the Abruzzi and
Campania, but is of negligible importance in the extreme
south and Islands. As with wheat, yields differ greatly from
region to region, being as much as four times as high in
Lombardy (about 50 quintals per hectare) as in Calabria and
Sicily (about 12). In this case the comparison is only of

\(^1\) Originally, of course, introduced from the New World to Europe in the
16th century.
academic interest since, unlike wheat, maize is only a very minor item of production in the areas of lowest yield.

Other cereals are of even more localised importance. 90% of the rice is grown in a restricted area of irrigation in Piedmont and Lombardy lying north of the river Po and between the rivers Dora Baltea in the west and Adda in the east. It gives a higher grain yield than any other cereal in Italy and is associated with a very characteristic rural landscape. Oats are grown mainly in the less inviting, drier parts of the Peninsula, including Apulia, while barley is confined mainly to mountain areas, including Trentino–Alto Adige, parts of the Apennines, and the more rugged eastern part of Sardinia.

Other field crops grown in Italy for food, though occupying a much smaller area than cereals, are mostly of higher value per unit of area, require more intensive labour, and are generally associated with a high density of rural population. Fig. 6.9 shows some of the principal areas of specialisation in both field and tree crops. Beans are a basic item of diet in many rural areas and their cultivation is widespread. The fava type is grown in the Peninsula and in Sicily, 40% of the national total being in this island. The fagiolo type is cultivated from the Po south as far as Naples. Potatoes occupy a smaller area than beans; their cultivation occurs mainly in the central part of the Peninsula, but nowhere are they such a fundamental item of diet as in Central and Eastern Europe. As with most crops, yields of potatoes are appreciably higher in the North Italian Lowland than in the South. Other vegetables are widely grown in Italy for local consumption, rarely however occupying a large area, but tomatoes of international fame are grown in a number of localities and this crop occupies some 120,000 hectares in Italy as a whole, the Naples area, the Bari area, and parts of Emilia–Romagna and Sicily specialising in tomatoes for export as well as for the national market.

Sugar beet is one of the major crops in Italian agriculture, though its extent is not great. Like rice its cultivation is mainly confined to a small part of the North Italian Lowland, this time the non-irrigated, low-lying area, much of it relatively recently reclaimed, at the eastern end. Emilia–Romagna accounts for about two-thirds of the national total of both volume of production and of the area under sugar beet. It is grown on a more limited scale elsewhere in Italy, as for
Fig. 6.9 Distribution of selected specialised crops: a, Industrial crops, fruits and vegetables. b, The vine and the olive. c, d, Production of wine and olive oil in 1959. Note: In map b, only areas of specialised vine and olive cultivation are shown, but in maps c and d the production is from vines and olive trees grown both under specialised and under mixed conditions.
example in Calabria, but yields tend to be somewhat lower in the South than in the North. In view of the desirability of having large factories for processing the beet it is advantageous to grow a large amount within a limited radius of each factory.

Other crops requiring considerable processing before consumption, or produced for the textile industry, include tobacco, hemp and cotton. Tobacco is grown widely in Italy but is of special importance in the eastern extremity of Apulia. Hemp is grown in the Naples area and the lower Po valley either for the fibre (canapa taglio) or for the seed (canapa seme). Cotton has long been grown in Sicily but, except during the cotton ‘famine’ of the American Civil War, never in more than token quantities until the 1950s. Now about 20,000 hectares are occupied and 60,000 quintals produced. The growing of flowers is an attractive and famous branch of Italian agriculture in Imperia province, Liguria, and is found in a number of other localities as well. The area occupied is minute but the value of production per unit of area very high indeed.

6.6 TREE CROPS

Tree crops grown under specialised conditions in Italy occupy 2,700,000 hectares and vines account for over 40% of this, olives for nearly 35%. The remaining tree crops include numerous deciduous fruit and nut trees, citrus fruits and the carob. All tree crops grown as special crops are also grown alongside field crops, while the mulberry is virtually confined to mixed conditions and is rarely grown in plantations.

Fig. 6.9 shows only the main areas of vine cultivation, for the vine is grown in virtually every part of Italy and each rural area aims at being more or less self-sufficient in wine, though the quality of the local product is often poor. The larger towns naturally have to draw on areas further afield not only for finer wines but also for ordinary wines; Milan, for example, receives large quantities of ordinary wine from Apulia. Fig. 6.9 shows clearly that an appreciable amount of wine is produced in every regione of Italy but output per inhabitant varies greatly, Lombardy obviously being deficient, Apulia having a surplus. The specialised wine acreage is actually concentrated in a few areas. Apulia has about 25% of the acreage, Sicily (much of it in Trapani) about 20% and Piedmont (especially in the Monferrato Hills) nearly 15%. Most of the grapes grown
in Italy are made into wine, but table grapes are a speciality of Apulia and dried fruit comes mostly from Sicily. In addition to the ordinary table wines, a great range of high grade wines are produced, varying in quality according to local soil and climatic conditions. The heavier wines come mainly from the South: Marsala from Trapani province, for example. Piedmont specialises in lighter wines including the famous Asti spumante. In spite of having the well-known Chianti district, Tuscany is not one of the outstanding areas of specialised viticulture; like much of the North and Centre its vines are grown mainly as part of a mixed cultivation. The vine in Italy is essentially a crop of the hill country rather than of the plain or mountain areas. Often it is grown on terraced slopes where field crops are not easily cultivated.

Like the vine, the olive is grown both as a specialised and as a mixed crop but most of the olive harvest is accounted for by the areas of specialised cultivation. Like the vine, too, it is grown mainly in the hill country. Its growth is much more seriously restricted by low temperatures, however, and it cannot resist the long cold winter of the North; apart from diminutive olive plantations by the lakes of Lombardy its cultivation is therefore restricted to Italy south of the Northern Apennines. About half of the total Italian acreage of specialised olives is in Apulia and Calabria. As Fig. 6.9 shows, it is also grown in many other parts of the Peninsula and Islands, but its cultivation extends further north on the Tyrrenian side of Italy than on the Adriatic side, a reflection of the sensitivity of the tree to the rather more severe winter of the Adriatic side. The olive is grown almost entirely for its oil, widely used in Italy for cooking; very limited quantities of olives are grown for consumption themselves.

If the olive tree is the characteristic tree crop of the Mediterranean area and a warm temperate plant, citrus fruits represent a more recent intrusion into the area from a sub-tropical climate and are even more restricted than the olive by the severity of winter conditions, tolerating only the mildest of frosts. The three main types grown in Italy are lemons, oranges and mandarins. Sicily alone accounts for over 60% of all the citrus fruits and Calabria and Campania for almost all the rest. Though grown elsewhere, as on the Riviera, cultivation on a commercial basis in the three regions mentioned is confined to certain small coastal plains and the lower slopes of hills and
mountains close to the sea and rarely affected by frost. On the mainland, the Sorrento Peninsula south of Naples, and the Piana di Gioia in Calabria, are the chief districts of cultivation. In Sicily the northern and eastern coastlands, including the lower slopes of Etna, the plain of Catania and the Conca d’Oro (Palermo), have large citrus groves. Bergamottes, another type of citrus, are virtually confined to a few small valleys at the southern tip of Calabria.

Like the vine, other deciduous fruits are grown throughout Italy, though there are definite areas of specialisation. The areas of mixed cultivation in this case contribute nearly as much as the specialised orchards. The North is the main producer of apples, pears, plums and peaches and Emilia–Romagna the leading producing regione of Italy. Apricots, figs, almonds, hazel nuts and walnuts are produced mainly in the Peninsula, but Campania grows virtually every deciduous fruit in some quantity.

The mulberry, grown for its leaves for raising silkworms, rather than for its fruit, is widely planted in the lowland north of the river Po but invariably along field boundaries or by the side of roads, not in orchards. Veneto and Friuli–Venezia Giulia together account for over half the Italian total, Lombardy and Piedmont for nearly another third. The carob bean, a tree crop grown for cattle fodder, is confined largely to south-east Sicily, but is grown also in Apulia and Lazio; like the mulberry it is grown mainly in mixed cultivation.

In conclusion it may be noted that while the North generally has greatly superior conditions for the cultivation of most field crops and for the raising of livestock, the South has certain advantages, including limited occurrence of frost and hotter summers, in the cultivation of tree crops.

6.7 LIVESTOCK AND PASTURE

Fig. 6.10 show the distribution of cattle and sheep in Italy by regions. In the late 1950s there were about 9m cattle (half of them dairy cows), 8½m sheep, 1¼m goats, 4m pigs and 1½m horses, asses and mules. Leaving apart the draught and transport animals (few oxen are now used in Italy for this purpose) it is necessary to reduce the total of sheep, goats and pigs several times to achieve a realistic comparison with cattle. Although in an accurate assessment age, breed and function of the animals concerned would have to be considered, about
six head of sheep, goats or pigs may be taken as the approximate equivalent of one head of cattle. The 9m cattle, therefore, are roughly four times as important to the rural economy as the 14m head of smaller animals. This should be taken into account in the two distribution maps. There is a gradual tendency for the number of cattle to increase, and for sheep
and goats as well as horses, asses and mules to diminish; the number of pigs and poultry is not changing at present.

Though kept throughout Italy, cattle are clearly very much concentrated in the North, dominating the livestock side of farming both in the Alps and in the North Italian Lowland. Sheep rival cattle in importance in the southern half of Italy but (bearing in mind the 6:1 conversion) only in Sardinia are they the dominant type of livestock. Like the cattle, most of the pigs are in the North. The regional production of meat is roughly a reflection of the distribution of total livestock, there being no areas of particular prominence or specialisation.

The distribution of livestock is related to two main sources of fodder, to field crops such as rotation grasses, lucerne, and grains, grown in areas of arable farming, and to natural pastures, grazed, or cut for hay, but rarely improved in any serious way. The connection with tree crops is very slight, though the carob bean, for example, is fed to cattle, and mulberry leaves to silkworms, if these can be considered livestock. Fig. 6.10b shows the distribution of rotation fodder crops in Italy, expressed according to shading as a percentage of total area of each regione and, by the circles, in total weight of fodder produced. The size of the regions is too large to reveal clearly that the main area of production of fodder from arable farms is the North Italian Lowland. Southwards into the Peninsula and in the Islands drier conditions and the increasing role of tree crops make the cultivation of fodder less easy and not economical. A comparison of maps a and b shows very clearly the relationship between quantity of fodder produced and number of cattle kept in each regione, but in the Alps livestock farming is confined to cattle and here, as suggested in map d, permanent pasture, not arable land, is the main source of fodder. A comparison of maps b and d shows that although the area under rotation fodder crops and permanent pastures is almost identical the yield of the arable fodder is several times as high as that of the permanent pastures. A comparison of maps c and d shows that except in the Alps there is some relationship between the distribution of sheep and of permanent pasture.

As with most crops discussed earlier, so also with livestock carrying capacity, the southern half of Italy compares very unfavourably with the North. Much lower yields of fodder crops are obtained when these are cultivated on arable farms
MECHANISATION AND FERTILISERS

while the extensive permanent pastures yield very little indeed.

6.8 MECHANISATION AND FERTILISERS

Compared with north-west Europe, Italy has been slow to modernise its agriculture. Labour productivity is still much lower and productivity per unit of farmland, though very high in the North Italian Lowland, leaves much to be desired in the Peninsula. For various reasons mechanisation has been introduced relatively slowly in Italy: the late development of the engineering industry, the low consumption of motor fuel until after the Second World War, the generally small size of holding and lack of capital for costly equipment in most areas, and the difficult terrain over most of the country coupled with the widespread occurrence of small fields, often interplanted with trees even in many lowland areas otherwise suitable for mechanisation, have all contributed. Moreover in the economic circumstances of Italy up to the present, the sudden introduction of mechanisation would have been disastrous from the point of view of the employment problem since other activities would not have been able to absorb the resulting surplus labour. In view of the natural conditions and the proximity of growing industrial concentrations, it is not surprising that more progress has been made in mechanisation in the North Italian Lowland than elsewhere in Italy, a fact clearly revealed by the large share here of machines in use and of fuel consumed in agriculture, about 60% of the national total.

The consumption of fertilisers in Italian agriculture, though increasing, is again lower than in north-west Europe. One reason for the relatively slow increase has been the lack of most minerals used in their manufacture and the late development of the chemicals industry. Further, the North Italian Lowland is naturally fertile anyway, while the poorer farmers of the Peninsula could not so easily afford fertilisers. At present the application of fertilisers is roughly uniform over the main regions of Italy.

6.9 AGRICULTURAL REGIONS

The description of Italian agriculture so far has been confined to the national distribution of the more important types of crop and livestock. In reality innumerable different combinations of these are found in different areas of the country
and a detailed study of agricultural statistics on the basis of commune data arrives at a very large number of agricultural regions. In more general terms some 40 regions have been suggested by one Italian geographer,¹ but no region obviously is completely uniform nor necessarily all that distinct from neighbouring regions except where some marked physical barrier intervenes, since each towards its limits assumes more and more of the characteristics associated with the adjoining regions.

The great diversity of farming practices and combinations of crops in Italy is due to several reasons. Firstly, there are at least three distinct types of climate, one associated with the Alps, one with the North Italian Lowland and one with the Peninsula and Islands. Secondly, relief and soil conditions often vary greatly over short distances. Thirdly, there are few areas in which a true monoculture prevails; usually three or four important crops are found together, and often livestock is kept as well. Given the great number of crops grown in Italy and the widespread occurrence of at least some livestock it is not surprising that the farming in each district has its own particular combination of these. It is not proposed here to attempt a detailed study of the agricultural regions of Italy, but in order to summarise this chapter the outstanding features of three basic agricultural regions, the Alps, the North Italian Lowland and the Peninsula and Islands, are suggested below.

The Alps are characterised by their ruggedness and generally poor soils, as well as by cold conditions above a certain altitude. The area suitable for the growth of field and tree crops amounts to a few per cent of the total area, is confined to the valley floors and lower slopes and may be used to grow fodder for livestock, food for local human consumption or occasionally special crops such as the vine or apples. Above this are three main zones of land use, the lower pastures, used in spring and autumn, an intermediate zone of forest, and, above the tree line, high summer pasture, reaching to the completely useless mountain summits. The whole rural economy of the Italian Alps revolves very much around cattle and forestry, with local variations in emphasis and in altitude of the basic land use zones mentioned.

The North Italian Lowland, and for convenience, adjoining

hill country, is farmed throughout except for river floodplains and other ill-drained areas and of course urban concentrations. Irrigation is largely confined to one main area in Piedmont and Lombardy and is virtually impossible on the south side of the Po since the Apennine rivers are nearly dry in the summer months. Without irrigation, however, rainfall is sufficient, and combines with fertile soils to give high yields of many crops and to support a high density of cattle. On the whole the central part is more productive either than the extreme western end, the lowland in Piedmont, or the extreme east. Fertility also diminishes sharply towards the northern rim, where coarse materials from the Alps have formed tracts of sand and gravel. There is great variety in emphasis in the lowland itself, some areas concentrating on the growth of wheat, or maize or rice or even fodder for livestock.¹

The Peninsula and Islands have an even greater variety of farming conditions than the Northern Lowland but in certain respects the whole area contrasts strikingly with both the Alps and the Lowland. While the Alps are predominantly mountain and the Lowland, obviously, largely plain, the Peninsula contains mountain, hill country and plain. There is no one single large fertile area but many productive small coastal plains and interior basins, often with adjoining less fertile hill country or sometimes encircled by infertile mountain areas. Nor are the mountain areas very large and continuous. Generally speaking, in any sizable area a combination of lowlands intensively planted with field crops, less fertile hill country growing wheat or tree crops, and mountain with poor forest and pasture, will be found. Very fertile areas do occur but they are limited in extent, and their usefulness to the regions in which they occur is reduced by the excessively high density of population they support. These contrasts in the Peninsula will be discussed in the appropriate regional chapters.

6.10 FORESTRY AND FISHING

Forestry and fishing are generally considered with agriculture in Italian statistical publications and may conveniently be dealt with here before a discussion of mining and manufacturing, since they are associated with plant and animal products.

Fig. 6.7 shows the proportion of forest in the provinces of Italy without in any way suggesting the predominant tree species in it or its commercial quality. The distribution of forest in Italy is basically related to the distribution of mountains, since it occupies mainly areas that have been left as unsuitable for agriculture after more than two millennia of continuous occupancy, during which time every locality suitable for arable farming and grazing has been tried at some stage or other. In recent decades a considerable amount of forest has been planted, not only in mountain areas, but also in hill country to protect slopes, and even in the fertile Northern Lowland. As well as being planted as field boundaries and to bind the banks of river and irrigation channels, poplars are now even being planted in the Po valley as an economic proposition competing with field crops. For the most part the forest in the Alps is coniferous, while in the Peninsula deciduous and evergreen Mediterranean species are both found. Timber is cut in Italy for two main purposes: for wood manufacturing and as a fuel. For wood manufacturing, coniferous species, mainly species of fir (Abies), account for about 40% of the timber, deciduous species, mainly chestnut, beech and poplar, account for the rest. In 1960 about 3m cubic metres were supplied by the forests, the 1950s being characterised by a gradual decline in the total cut. Almost half comes from the Alps, Trentino–Alto Adige being the chief source of supply. In the Peninsula, Calabria, with its famous deciduous mountain forests, is the largest producer. Little timber is produced on the Adriatic side of the Peninsula, in the Islands or in the North Italian Lowland.

Wood was the main source of fuel in Italy until the importation of coal began on a large scale a century ago and the cutting of firewood for domestic uses as well as the burning of charcoal linger on in the remoter parts of Italy though wood now accounts for only a tiny part of the national consumption of sources of energy.

The Italian fishing industry is one branch of the economy that has lagged far behind general progress in the world. In 1960 Italy’s catch of 212,000 tons put it about twelfth among the countries of Europe alone. The reason for its failure to increase the catch in the 1950s is that the Mediterranean is a poor fishing area and Italy is not favourably situated to reach better fishing grounds in the Atlantic. Little progress has been
made in modernising its fishing fleet and providing large vessels, with the result that efficiency is very low. The labour force is absurdly large (well over 100,000) for the tonnage caught, and is spread fairly evenly along the coasts of Italy, using a very large number of ports for its activities.

SUGGESTIONS FOR FURTHER READING

G. Merlini: Le regioni agrarie in Italia, Bologna 1948
G. Barbero: Land Reform in Italy, Achievements and Perspectives, F.A.O., Rome 1961
Touring Club Italiano: Carta dell’utilizzazione del suolo d’Italia al 200,000. This is an incomplete land use survey of Italy made in the 1950s and published in map form on a scale of 1 : 200,000. Only Peninsular Italy and Sicily are covered. The main forms of land use are shown. Although the survey work was done in much less detail than the British Land Utilisation Survey the maps are extremely interesting.
Chapter 7

INDUSTRY

7.1 INTRODUCTION

This chapter is concerned with what is broadly termed industry in Italy: employment in mining, processing and manufacturing as well as in building and construction and electricity, gas and water. The following figures (in thousands) show employment in these activities in Italy in 1951 and 1961, with selected branches of manufacturing shown separately.

<table>
<thead>
<tr>
<th></th>
<th>1951</th>
<th>1961</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Manufacturing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food, etc.</td>
<td>3,498</td>
<td>4,492</td>
<td>+28</td>
</tr>
<tr>
<td>Textiles</td>
<td>413</td>
<td>433</td>
<td>+5</td>
</tr>
<tr>
<td>Clothing</td>
<td>651</td>
<td>592</td>
<td>-9</td>
</tr>
<tr>
<td>Wood</td>
<td>412</td>
<td>527</td>
<td>+28</td>
</tr>
<tr>
<td>Wood</td>
<td>244</td>
<td></td>
<td>+26</td>
</tr>
<tr>
<td>Metallurgical</td>
<td>145</td>
<td>192</td>
<td>+32</td>
</tr>
<tr>
<td>Engineering</td>
<td>430</td>
<td>675</td>
<td>+57</td>
</tr>
<tr>
<td>Chemicals</td>
<td>149</td>
<td>227</td>
<td>+52</td>
</tr>
<tr>
<td>Extractive</td>
<td>119</td>
<td>104</td>
<td>-13</td>
</tr>
<tr>
<td>Construction</td>
<td>532</td>
<td>919</td>
<td>+73</td>
</tr>
<tr>
<td>Electricity, gas,</td>
<td>93</td>
<td>108</td>
<td>+16</td>
</tr>
<tr>
<td>water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4,242</td>
<td>5,623</td>
<td>+33</td>
</tr>
</tbody>
</table>

NOTE: The total for manufacturing includes the figures given for the selected branches of manufacturing.

During the period of 1951–61 Italian industrial production increased by approximately 120% (1951 = 100, 1961 = 220). During the same period, as shown in the table, the number of persons employed in industry only increased by 33%, from 4,242,000 in 1951 to 5,623,000 in 1961. In other words, the productivity of the average employee in industry has almost doubled in a single decade.

Both in 1951 and in 1961 (as always since unification) em-

1 See Appendix 5 for employment figures for manufacturing.
ployment in industry was very unevenly distributed over the national area. In 1961 no fewer than 69% of the persons employed were in the eight regioni of the North whereas these have only 45% of the total population of Italy (see Fig. 6.1). Even more marked is the concentration in Lombardy and Piedmont: 44% of persons in industry but only 22% of the total population of Italy. The contrast in manufacturing proper is

in reality greater than these figures suggest, for whereas non-manufacturing activities (mining, building, water and other services) are distributed fairly evenly over the national area, large-scale manufacturing is particularly concentrated in the north-west.

No less striking and disappointing for those who hoped for widespread industrialisation in the South is the uneven way in which expansion in employment has taken place over the national area since 1951 (see Fig. 7.1). Lombardy, with less
than 15% of the total population of Italy, absorbed almost one-third of the increase. Veneto, Emilia–Romagna and Tuscany, with little more than 20% of the total population, accounted for 35% of the total increase. The South and Islands, with 37% of the population, only had 8% of the increase. In other words, the expansion of employment in industry took place almost entirely either in already highly (by Italian standards) industrialised regions (Lombardy and Piedmont) or in what might be called already semi-industrialised regions (Veneto, Emilia–Romagna and Tuscany). South of Florence, in that part of Italy still heavily dependent on agriculture in 1951, an appreciable increase in employment in industry has been confined to a few large towns (Rome, Naples, Bari, Palermo).

The following figures show the provinces with the greatest absolute gain in employment in industry between 1951 and 1961 (persons employed in thousands).

<table>
<thead>
<tr>
<th></th>
<th>Gain</th>
<th>From</th>
<th>To</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milan</td>
<td>279</td>
<td>638</td>
<td>917</td>
<td>44</td>
</tr>
<tr>
<td>Turin</td>
<td>119</td>
<td>330</td>
<td>449</td>
<td>36</td>
</tr>
<tr>
<td>Florence</td>
<td>61</td>
<td>105</td>
<td>166</td>
<td>59</td>
</tr>
<tr>
<td>Rome</td>
<td>50</td>
<td>166</td>
<td>216</td>
<td>39</td>
</tr>
<tr>
<td>Naples</td>
<td>49</td>
<td>117</td>
<td>166</td>
<td>42</td>
</tr>
<tr>
<td>Bologna</td>
<td>48</td>
<td>75</td>
<td>123</td>
<td>63</td>
</tr>
<tr>
<td>Brescia</td>
<td>39</td>
<td>98</td>
<td>137</td>
<td>40</td>
</tr>
<tr>
<td>Varese</td>
<td>34</td>
<td>141</td>
<td>175</td>
<td>24</td>
</tr>
<tr>
<td>Modena</td>
<td>34</td>
<td>39</td>
<td>74</td>
<td>88</td>
</tr>
<tr>
<td>Verona</td>
<td>32</td>
<td>49</td>
<td>81</td>
<td>65</td>
</tr>
</tbody>
</table>

7.2 SIZE OF FIRM AND FACTORY

Italian industry includes both State and privately owned enterprises. Industrial firms (ditte) range from giant companies employing tens of thousands of persons to small workshops with a handful of workers and even many self-employed craftsmen. In 1961 four Italian industrial firms came among the top hundred in the non-communist world outside the U.S.A. according to sales, and by way of introduction these are worth listing.

Nationalisation of the electricity industry, proposed but not carried out by 1962, would amalgamate Edison, already a
<table>
<thead>
<tr>
<th>Firm</th>
<th>Main products</th>
<th>Value of sales (millions of U.S. dollars)</th>
<th>Rank</th>
<th>Employment (thousands)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiat</td>
<td>Motor vehicles</td>
<td>1,026</td>
<td>12th</td>
<td>108</td>
</tr>
<tr>
<td>Montecatini</td>
<td>Minerals, chemicals</td>
<td>609</td>
<td>34th</td>
<td>73</td>
</tr>
<tr>
<td>Pirelli</td>
<td>Rubber, cables</td>
<td>552</td>
<td>40th</td>
<td>55</td>
</tr>
<tr>
<td>Snia Viscosa</td>
<td>Fibres, textiles</td>
<td>317</td>
<td>93rd</td>
<td>38</td>
</tr>
</tbody>
</table>

Source: Fortune, LXVI, 2 August 1962, pp. 116-17

* Includes persons employed by the firm outside Italy.

large producer of electricity, and many other private firms in Italy, and produce a very large enterprise, while the State already runs most of the railways (Ferrovie dello Stato) and the production of some of the steel and the refining and distribution of much oil and gas is also in State hands. In several branches of manufacturing a single firm accounts for a very large share of the Italian total: Fiat over 80% of the motor vehicles, Olivetti most of the typewriters and calculating machines, Necchi the sewing machines and so on.

At the other extreme, more than a quarter of all persons employed in industry are in establishments with ten or fewer persons, and there are actually over a quarter of a million establishments with one person only. The smallest enterprises are mainly self-employed individuals or persons employing a handful of workers, making clothing, furniture and other products that have not become the monopoly of large-scale industry, or are shoe repairers, garage mechanics and other persons engaged in services activities but classified under industry. Small enterprises do however also make an important contribution to large-scale industry, existing as it were on the fringe of this, and making parts for engineering products, footwear and so on. This small-scale industry in Italy is known as Artigianato, a term conveying the idea of skilled craftsmen working with little capital equipment. Small-scale manufacturing is presumably less efficient than large-scale manufacturing, but it is a vital part of Italian industry. It is spread more evenly over the country than large-scale industry and accounts for a large share of the industrial population in many provinces of the Peninsula and Islands.

Between the two extremes there are of course many firms
employing several dozen to several hundred persons. These are characteristic of textiles, food processing and light engineering.

Size of factory is related to size of firm, but it should be appreciated that all of the largest firms mentioned have a number of different works. Fiat employs some 80,000 persons in Turin and vicinity but these are distributed among at least ten major factories and many smaller ones. Pirelli's Milan works employs over 10,000 persons, as does the motor vehicle assembly works of Fiat in Turin, but there are no truly giant works in Italy, few with over 10,000 in one works, and only a limited number with over 5,000.

One feature of privately owned Italian industry may be added here: the widespread paternalism. Most of the larger firms go to great lengths to provide housing, health and educational facilities for employees and their families. This has often been necessary in the past to attract workers from places not near the vicinity of the site chosen by the industrialist. At the same time it reflects the inadequacy of Italian local government and especially its widespread failure to finance housing projects. Many firms are still connected with members of the families that founded them two or three generations ago and this adds to the spirit of paternalism. Though Italian industry has been affected by bitter disputes between employers and workers, conditions and prospects in manufacturing, if initially harsh, have usually been much more attractive than those in agriculture.

7.3 History of Manufacturing

At various periods in the last two thousand years different parts of Italy have been among the leading areas of manufacturing in Europe. In the Roman Empire, Italy specialised in the manufacture of various goods for sale elsewhere in exchange for food products. In the later Middle Ages there was a remarkable growth of manufacturing in the northern half of the country. Lombardy and Tuscany were leading areas of woollen and silk manufacturing, iron ore was smelted and metal working flourished in places in the Alps, Venice and Genoa were great shipbuilding centres, and Milan and Florence, as well as the two ports, were leading commercial and financial cities. If the 15th century was one of great industrial expansion, political developments in the 16th and 17th
centuries first checked the expansion and then led to a decline of manufacturing. As a result, by about 1700 many of the industries of the later Middle Ages had died out completely or had been greatly reduced.

Though it is right to note that the concentration of modern industry is in roughly the same part of Italy as the industry of several centuries ago, it is a mistake to assume that there has been a continuous tradition of manufacturing from the past into the present and it is more realistic to think of modern industry as emerging from almost nothing in the basically rural Italy of the early 19th century. As shown in Chapter 3 Italy was at this time divided into a number of separate political units of greatly different size; most were too small to allow the accumulation of much capital. The units differed appreciably in prosperity even at this stage, the Northern Lowland having a much more prosperous agriculture than the rest.

Before unification in the 1860s the introduction of modern industry was slow, although the techniques of the Industrial Revolution were spreading fast from Britain into France, Belgium, Germany and even the Austrian Empire. All these countries had large coalfields, and availability of coal was essential at this stage. Italy only has a few diminutive coalfields.

During and soon after the Napoleonic Wars the first signs of modern industrialisation could be noted in the northern part of Italy; factory machinery was imported and foreign technicians and capital introduced. Until the 1850s, however, when the early railways began to allow coal, machinery and raw materials to be moved between certain ports and interior localities, little was achieved on account of the initial dependence on the importation of virtually every ingredient except labour. The greatest progress was made in the Milan area, where the modern cotton industry, using imported coal for small steam mills or even power from streams, and machinery from England, is generally considered to be the first evidence of modern factory industry in Italy. Some progress was made, too, in nearby Piedmont. South of the Grand Duchy of Tuscany the few attempts to put up new factories had failed dismally. Italian historical statistics of importation of coal, machinery and raw materials for industry show clearly that progress was small up to 1860 even compared with that in the troubled decade of unification, and that the really spectacular
expansion took place between 1880 and 1910, after which for various reasons progress has been very irregular.

Unification was of fundamental importance to Italian industry in providing a single national market with 25m persons over which, thanks to the haste with which the new State developed its railways, goods could soon be moved reasonably easily between all regions. There was a general desire to industrialise, too, on the part of the new State, in order to strengthen its position among European powers.

As Italian industry grew, various tendencies could be noted. Since coal was the main source of energy until well into the 20th century much industry developed in the ports, which also, of course, received the raw materials. The attraction of the Milan and Turin areas was also strong, once these had good rail links with Genoa and Venice, for a start had been made in these areas before unification, and there were a prosperous agriculture to provide capital and entrepreneurs ready to use it, and to use it in their own part of Italy rather than in what were to them the remote Peninsula and Islands. Workers too were better equipped for industry thanks to higher educational standards. Northern Italy, then, as now, also had a large part of the purchasing power in Italy and therefore of the market for many manufactured goods. These are some of the reasons offered by economic historians to explain the early success of modern industry in the northern part of Italy and especially in the north-west. But it must be stressed that the hydro-electric power of the Alps had nothing to do with this initial trend. Only in about 1900 did factories begin to use electricity though even then on a modest scale; only after the First World War did hydro-electric power begin to rival imported coal. Subsequent trends in the location of Italian industries will be summarised at the end of this chapter, after the industries themselves have been discussed.

7.4 MINERALS

In 1961 only 104,000 persons were engaged in mining, 11,000 of them in the extraction of coal, oil and gas, 20,000 in the extraction of metallic ores and 73,000 in the extraction of other minerals. Ente Nazionale Idrocarburi largely controls the oil and gas industries, while most of the metallic ores and some non-metallic minerals are accounted for by Montecatini. Building and road materials are widely produced in numerous
MINERALS

small quarries. Employment has declined in extractive industries recently, partly thanks to increasing efficiency in existing mines, partly due to the closing of heavily worked mines such as the coal mines of Sardinia.

Although extractive industry is represented in some form in every province of Italy, three areas are of particular importance: southern Tuscany (Colline Metallifere area), south-central Sicily, and south-west Sardinia (Iglesiente). In each of these areas about 10,000 workers are concentrated in a relatively small area. Fig. 7.2 shows the principal areas for the extraction of minerals other than sources of energy (see Fig. 7.3).

Iron ore is poorly represented in Italy; Elba supplies about half of the total and the rest comes mainly from the Alps and...
Sardinia. Italy now imports several times as much as it produces at home and also derives iron from home mined iron pyrites, used in the chemicals industry. A number of other metallic ores are produced in moderately large quantities: lead and zinc mainly in Sardinia and the Alps; bauxite, mainly in the Gargano peninsula of Apulia, and copper from copper pyrites, used, like iron pyrites, in the chemicals industry. Only in the output of mercury does Italy rank among the leading producers in the world; the source is a small area in
southern Tuscany near Monte Amiata. Other metals mined in Italy, though produced in very small quantities, include manganese, gold, magnesium and uranium.

Important non-metallic minerals include sulphur, mined mainly in south-central Sicily and the Northern Apennines, and potash, recently exploited by Montecatini, also in Sicily. About half of the salt (sodium chloride) produced in Italy comes from mines, most of them around Volterra in Tuscany, the rest in Sicily. Salt is also collected by evaporation of seawater in specially prepared coastal salt pans (saline). The largest of these cumbersome relics of the past each occupy several square kilometres and take advantage of the high summer temperatures of the Mediterranean region. Almost half of the salt derived from sea water comes from near Cagliari, another quarter from Margherita di Savoia (Apulia) and an eighth from Trapani (Sicily).

Italy is famous for certain stones and the most distinguished are certainly the Carrara marbles of north-west Tuscany. The extraction here has been modernised and only employs about 2,000 persons now.

Home-produced energy minerals have not played a prominent part in the Italian economy until the 1950s (see Fig. 7.3) but the tiny coal and lignite fields were used in the Fascist period in the interests of economic nationalism and strategy, and output reached several million tons a year at one stage. Most of the coal has been produced in Sardinia, while lignite comes from the northern interior part of the Peninsula. Already in the 1930s very small quantities of gas and oil were being produced, as well as pitch for asphalt from Ragusa in Sicily. There are considerable areas in Italy with geological conditions suitable for the accumulation of hydrocarbons (see Fig. 7.3, inset map) and in the years following the Second World War rapid success was achieved in the production of natural gas in the North Italian Lowland. From 100m cubic metres in 1948 output has risen to 1,400m in 1952 and 6,500m (equivalent to about 10m tons of coal) in 1960. The chief producing provinces are Ravenna, Bologna and Piacenza in Emilia–Romagna, and Cremona and Milan in Lombardy. Many other sources, some shown in Fig. 7.3, have recently been discovered. The breakthrough in oil production came later in the 1950s, this time in Ragusa and Caltanissetta provinces in Sicily. Output rose from under 250,000 tons in
1955 to 2m in 1960. Like hydro-electric power, natural gas is produced in Italy in predominantly rural localities and the rise of the industry has been accompanied by an extensive network of gas pipelines in the North (see Fig. 10.3) to take the gas to industrial and other consumers in existing urban areas. The Italian crude oil is piped only a short distance to the refinery in Syracuse province and no comparable oil pipeline system exists yet.

7.5 SOURCES OF ENERGY

One of the fundamental influences on the distribution of industry in Italy has been the availability and relative importance of various sources of energy at different periods since unification. Home-produced coal, natural gas and oil have already been discussed. In addition Italy consumes home-produced hydro-electricity as well as imported coal and oil. Coal, gas and oil, whether home-produced or imported, all contribute to generate thermal electric energy but this, unlike hydro-electric energy, is of course a secondary form derived from the sources already taken into account. Hydro-electricity will first be discussed and then the changing form of the Italian energy balance will be considered.

In 1960 Italy had 12,612,000 kw of installed capacity in its hydro-electric power stations and these produced 46,100m kwh, equivalent roughly to what would be produced by 28m tons of coal.\(^1\) The installed capacity was distributed as follows in 1960 (thousands of kilowatts):

<table>
<thead>
<tr>
<th>Region</th>
<th>Capacity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lombardy</td>
<td>2,745</td>
<td>22</td>
</tr>
<tr>
<td>Trentino-Alto Adige</td>
<td>2,676</td>
<td>21</td>
</tr>
<tr>
<td>Piedmont and Valle d’Aosta</td>
<td>2,548</td>
<td>20</td>
</tr>
<tr>
<td>Veneto and Friuli-Venezia Giulia</td>
<td>1,348</td>
<td>11</td>
</tr>
<tr>
<td>Rest of North and Centre</td>
<td>1,583</td>
<td>12</td>
</tr>
<tr>
<td>South</td>
<td>1,451</td>
<td>12</td>
</tr>
<tr>
<td>Islands</td>
<td>261</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12,903</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

\(^1\) Considering 1,000m kwh of electricity to be equivalent to 600,000 tons of coal, not 125,000 tons, the conversion now being used, unrealistically in the view of the author, in United Nations publications.
Production and consumption by regione do not coincide. Lombardy, for example, receives hydro-electric power from several provinces in other regioni, while the Trentino–Alto Adige is the greatest regione of surplus in Italy. In general the flow of electricity is from the Alps, the highest areas of the Central Apennines and the mountains of Calabria to relatively close areas of lowland, but long-distance transmission is increasing. Fig. 7.4 shows the distribution of the larger hydro- and thermal electric power stations.

There are some 2,700 hydro-electric power stations (centrali) in Italy, ranging in capacity from several hundred thousand to a few hundred kilowatts. Though the earliest stations utilised a small vertical fall of water, almost all the larger Italian hydro-electric stations use a high vertical fall of water but a relatively small volume. Italy does not therefore have giant power stations like those on the Volga in the U.S.S.R., which use a very large volume of water, but several are nevertheless impressive in scale. Many of the more important stations stand at the lower ends of secondary valleys in the Alps. Water is collected along tunnels from all the streams in the valley, the tunnels closely following appropriate contours, and working round to a suitable point from which the water can be dropped in tubes down the penstock to the generators on the floor of the main valley. The fact that many tributary valleys are ‘hanging’ as a result of glaciation is a considerable asset. Fig. 7.5 illustrates this procedure in one of Italy’s largest hydro-electric schemes. The main rivers themselves in the Alps and Apennines do not provide many suitable sites for power stations and in the North Italian Lowland only a few moderate-sized stations, including the two oldest of any size, Paderno d’Adda and Vizzola Ticino, use tributaries of the Po or the Po itself.

About three-quarters of all the hydro-electricity in Italy is generated in the Alps. This area has the advantage over the mountain areas of the Peninsula of greater vertical drops, heavier total precipitation, and precipitation throughout the year; a drawback is freezing in the winter but this only reduces the quantity generated. In many localities in the Alps it has been necessary or desirable to build dams and create reservoirs to provide or increase a flow of water. At the same time water can be stored and its flow through the power station regulated. In the Peninsula, too, reservoirs are required to
Fig. 7.4 Principal power stations and output of hydro- and thermal electricity in 1959.
collect and preserve the predominantly winter precipitation for use in the summer, but as a result considerable loss occurs through evaporation.

Ever since the large-scale importation of coal began a century ago the relative importance of the various inanimate sources of energy has constantly changed in Italy. At the same time the users of this energy, industry, mines, transport, agriculture and domestic consumers, have all at different times taken different shares of the total. In order to show the changing importance of different sources in the present century, the total consumption of energy, expressed as (note) coal equivalents, has been calculated for five-year periods.

Allowance has been made for sources of energy exported, but the increasing efficiency of utilisation of fuel has not been considered. The total consumption has increased more than ten times in the last sixty years (the population of Italy, of course, also increased – from 33 to 50m). At the beginning virtually the only source, apart from wood, was imported coal. Not until

\[1\] To avoid unnecessary complications, animate sources of energy (animal power) and wood have not been considered. Until about 1880 these were the chief sources but now their contribution is slight.
## Consumption of Energy in Italy during the Present Century in Millions of Tons of Coal Equivalent

Figures are totals for 5-year periods

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Imported</th>
<th>Home-produced</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>coal</td>
<td>oil</td>
</tr>
<tr>
<td>1901-05</td>
<td>28</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>1906-10</td>
<td>44</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>1911-15</td>
<td>54</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>1916-20</td>
<td>48</td>
<td>32</td>
<td>1</td>
</tr>
<tr>
<td>1921-25</td>
<td>66</td>
<td>46</td>
<td>3</td>
</tr>
<tr>
<td>1926-30</td>
<td>101</td>
<td>67</td>
<td>4</td>
</tr>
<tr>
<td>1931-35</td>
<td>98</td>
<td>56</td>
<td>6</td>
</tr>
<tr>
<td>1936-40</td>
<td>124</td>
<td>59</td>
<td>10</td>
</tr>
<tr>
<td>1941-45</td>
<td>93</td>
<td>36</td>
<td>1</td>
</tr>
<tr>
<td>1946-50</td>
<td>123</td>
<td>42</td>
<td>18</td>
</tr>
<tr>
<td>1951-55</td>
<td>232</td>
<td>48</td>
<td>80</td>
</tr>
<tr>
<td>1956-60</td>
<td>325</td>
<td>50</td>
<td>115</td>
</tr>
</tbody>
</table>

n. = negligible

The Second World War did home-produced hydro-electricity make a larger contribution than imported coal, a fact not usually sufficiently stressed in English geographical works on Italy. Imported oil eclipsed imported coal in the 1950s and now makes a larger contribution than hydro-electricity. Home-produced coal has only made a modest contribution except during the closing years of the Fascist period. Home-produced natural gas now exceeds 10% of total energy consumption, but home-produced oil still provides only a small part.

Most notable is the role of hydro-electricity. Only by about 1930 did it reach a third of the total, only for a time during and just after the Second World War did it account for half, and now it is back to less than a third. Moreover, since utilisation of potential is nearing completion in most areas, it is destined to decline still further. Currently Italian energy consumption depends almost equally on home and imported sources, an improvement on the early decades of development but a position that may not be maintained unless importation of oil can be checked by increased home output of natural gas and oil, and the development of nuclear power. Three sizable
nuclear power stations are under construction in the early 1960s (see Fig. 7.3).

Some implications of the changing energy balance for the location of industry may now be suggested. For many decades after unification Italian industry and other users of energy depended largely on coal imported by sea (to this day very little enters Italy by rail) and ports were therefore particularly attractive to industries using also imported raw materials. In the 1890s the electricity industry emerged from its experimental stage and in the 1900s transmission technology advanced far enough to enable it to be sent up to about 150 km. This put existing industrial areas in the North Italian Lowland within striking distance of power in the particularly favourable Alps. In the inter-war period, for strategic as well as economic reasons, industrial development away from the coast was favoured, and Lombardy and Piedmont continued to strengthen their position. In the postwar period the exploitation of natural gas in Emilia–Romagna and Lombardy in particular has had the effect of consolidating the northwest and giving a new basis for industrialisation in Emilia–Romagna and Veneto. At the same time, the establishment by many foreign companies of oil refineries at various places on the Italian coast has once again made certain coastal areas attractive, particularly since today interior sites are strategically just as vulnerable as coastal ones. The decision to place two of the three nuclear power stations between Rome and Naples recognises the large population and the deficiency in sources of energy in this area. As time goes on, sources of energy become more and more mutually interchangeable and at the same time growing electrification and the evolution of a national grid are reducing the advantages of particular areas over others, a trend noticed for some decades also in other west European countries.

7.6 ELECTRICITY

Electricity has so far been considered only as an original source of energy in the form of falling water, a resource spread very unevenly over the national area, like coal, oil and other energy minerals. Now it must be considered as a complete industry. In 1960 hydro-electric stations produced 46,106m kwh of electricity and thermo-electric stations 10,134m. This means that over 40% of the energy used in Italy is in the form
of electricity. The thermal electricity is generated from various sources: coal, natural gas, oil and geothermal being the chief. Fig. 7.4 shows the distribution of the larger thermal stations. Unlike the hydro-electric stations, the earliest were built in towns to supply power for lighting and tramways, but ever since the 1900s they have been complementary to hydro-electric stations. They have been built in places distant from the mountain sources of hydro-energy and many work to full capacity only in the seasons when the hydro-electric supply drops: in the winter in the North, in the summer in the South. Recently, efficient large new thermal electric stations using gas or oil have been built to boost total electricity supply rather than to help out hydro-electric supply. The thermal share of the total has increased since the inter-war period and in four regions, Liguria, Emilia–Romagna, Tuscany and Sicily, now accounts for more than half of the output.

While thermal electric power stations are usually placed near a large consuming centre the hydro-electric potential, by its very nature, is mostly to be expected in thinly peopled, relatively remote areas. In a few instances consumers, such as non-ferrous metal smelting and chemicals industries, have been placed near these sources, but nearly always the electricity has been transmitted a considerable distance. After early experiments it became possible to transmit electricity commercially over greater and greater distances and by the inter-war period there was already a very complicated network of transmission lines in various parts of Italy. Some idea is conveyed in Fig. 7.6 of the way in which hydro-electric stations are distributed in the Alps and of the complexity of transmission. There were many companies, and little co-operation in taking the current to the areas of consumption. The general direction is from mountain areas to concentrations of population. In addition, inter-regional 220 kV lines extend almost the whole length of the Peninsula and a special transmission line carries current from Calabria over the Strait of Messina into Sicily.

About three-quarters of all the electricity generated is in the hands of private commercial firms, one of the largest of which is the Edison Group. The rest is produced mainly by industrial generating capacity in factories for use on their own premises. The State railways and certain municipal undertakings also contribute.
About two-thirds of the electricity generated in Italy is consumed by industry, half in metallurgical and chemical branches alone. Over 20% is used by domestic consumers, only 7% for traction purposes and a mere 1% in agriculture. Altogether only 90,000 persons are employed in the electricity and gas industries, but electricity is a highly capitalised industry, far more important than its small labour force suggests.

### 7.7 Metallurgical Industries

Metallurgical industries, employing in 1961 192,000 persons, include the iron and steel industry, the smelting of non-ferrous metals and simple metal working (but not engineering). Fig. 7.8b shows the distribution by province in 1961 of persons employed in the industry and brings out clearly its localised
nature. The following are the chief provinces according to persons employed:

<table>
<thead>
<tr>
<th>Province</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milan</td>
<td>35,000</td>
</tr>
<tr>
<td>Turin</td>
<td>25,000</td>
</tr>
<tr>
<td>Genoa</td>
<td>18,000</td>
</tr>
<tr>
<td>Bergamo</td>
<td>14,000</td>
</tr>
<tr>
<td>Brescia</td>
<td>14,000</td>
</tr>
<tr>
<td>Naples</td>
<td>11,000</td>
</tr>
</tbody>
</table>

The *regione* of Lombardy alone has 40% of employment, the north-west (Lombardy, Piedmont and Liguria) over two-thirds. In the South and Islands the Naples area is the only area of any importance, while the Centre is declining somewhat in relative importance.

At the time of unification the iron and steel industry was very small in scope; local ores were smelted with charcoal in antiquated blast furnaces, and iron goods, including armaments, were made in the Alpine valleys of Como, Bergamo and Brescia provinces. After unification the industry was gradually built up on imported coking coal and national or imported iron ore. It has depended heavily on scrap, accumulated in Italy itself or specially imported. The build-up of armed forces in the Fascist period made an iron and steel industry vital strategically but the whole organisation was extremely precarious and output inadequate; for example, Italian warships were said to be very poorly protected with steel armour plating and were therefore given great speed to compensate for this deficiency. When Italy joined the European Coal and Steel Community in 1951 it looked as if, without protection against West Germany, the Benelux and France, the industry would stagnate or even decline. Precisely the opposite happened: between the early 1950s and 1960 Italian production of both pig iron and steel more than doubled, and in the early 1960s the expansion continues. ¹

In the early stages the Italian iron and steel industry developed mainly in coastal sites: Piombino and Portoferraio (Elba) used Elba iron ore, Genoa used imported ore. In the interests of security the government also sponsored a steelworks, opened in 1886, at Terni in the interior of the Peninsula. The older districts in the Alpine valleys at Lecco and behind Bergamo and Brescia were slowly modernised. With the expansion of engineering in the Milan and Turin areas high-grade steel was in growing demand, and new steelworks,

¹ Figures are: Pig iron, 1940 (peak), 1m tons; 1951, 1m again; 1960, 2·8m. Steel, 1938 (peak), 2·3 m; 1951, 3·0 m; 1960, 8·2m.
Fig. 7.7 Distribution of industry in Italy. See also maps in regional chapters for greater detail of many areas.
using pig iron or scrap from elsewhere and, in time, deriving power from electricity rather than coal, grew up in the North Italian Lowland: the firm of Falck, already established in the Alps, put up a new works at Sesto San Giovanni on the north-east outskirts of Milan. Fiat built its own steelworks in Turin and the Dalmine works, which makes tubes, was built near Bergamo, giving rise to a new industrial town.

Since the Second World War the secret of Italy's success has been the assembly of imported high-grade iron ore (from North Africa and elsewhere) and relatively cheap U.S. coking coal, in large, modernised or completely new integrated coastal works (see Fig. 7.7). In the late 1950s about three-quarters of the pig iron was produced by the works at Cornigliano (Genoa), Piombino (Legaorn province) and Bagnoli (Naples). Cogne (Aosta) and Sesto (Falck) were the main interior producers of pig iron, while another small producer on the coast is Servola, near Trieste. In the early 1960s a very large new works was opened at Taranto, thus increasing the share of pig iron produced on the coast; a new works at Vado, near Savona, is projected.

Steel production is more widely distributed than pig iron production, as well as being larger. Cornigliano, Bagnoli and Taranto will be the largest producers in the mid-1960s, but the Milan area and Turin continue to produce high-grade steel, while Terni and Bolzano are other steel centres. Most of the steel produced is further processed at the mills, either ready for use as rails, girders and so on, or ready for further manufacture in the engineering industry. Intermediate between these two are the generally small metal-working establishments to be found especially in association with the older areas of iron production.

The smelting and refining of non-ferrous metals in Italy is of limited scope. Sardinian ores are smelted in the Iglesiente or at ports on the mainland. Bauxite from Gargano in Apulia goes to Port Marghera (Venice) and Bolzano. Copper and other metals are refined mainly in the industrial areas of the north-west.

7.8 ENGINEERING

Compared with the coalfield industrial countries to the north, Italy was late in developing engineering. Implements, simple arms and parts for machines were made in the last
century but sophisticated machinery has been made on a large scale only in recent decades. The engineering industry evolved from the maintenance and repair of imported machines such as textile machinery and railway locomotives. Gradually more and more parts were made until finally the completed finished products were turned out. For reasons that are not altogether clear the north-west emerged as the dominant engineering region of Italy with motor vehicles and later aircraft being made in the Turin area, railway locomotives and electrical equipment in the Milan area and ships in Genoa. Other engineering centres have also grown up, but they are virtually confined to the northern half of the country.

Fig. 7.8a shows the distribution of employment in engineering. It should be appreciated that engineering includes persons actually servicing machinery as well as manufacturing it and that the apparently widespread occurrence south of the Arno valley of at least some engineering is actually little more than a reflection of the servicing activity to be found throughout the country. Altogether 1,369,000 persons were employed in engineering in Italy in 1961. The leading provinces are:

<table>
<thead>
<tr>
<th>City</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milan</td>
<td>301,000</td>
</tr>
<tr>
<td>Turin</td>
<td>214,000</td>
</tr>
<tr>
<td>Genoa</td>
<td>48,000</td>
</tr>
<tr>
<td>Varese</td>
<td>48,000</td>
</tr>
<tr>
<td>Brescia</td>
<td>46,000</td>
</tr>
<tr>
<td>Bologna</td>
<td>42,000</td>
</tr>
<tr>
<td>Como</td>
<td>38,000</td>
</tr>
<tr>
<td>Naples</td>
<td>37,000</td>
</tr>
<tr>
<td>Rome</td>
<td>36,000</td>
</tr>
</tbody>
</table>

Large-scale engineering, as opposed to servicing of machinery, is very highly localised in Italy. The Milan area (see Fig. 7.7, inset map), extending northwards to Varese, Como and Bergamo, forms the largest concentration, with some factories employing at least several thousand persons: Breda, making railway locomotives, electrical equipment and in the past aircraft and arms, is on the north-east side of Milan; nearby are Magneti Marelli and Ercole Marelli, Italy's largest electrical firms. Also in Milan are Alfa-Romeo (motor vehicles) and Innocenti (scooters and motor vehicles). Other towns to the north have their special interests: Legnano, for example, makes textile machinery. Turin is the second great engineering centre of Italy. Though it has a wide range of products it is dominated by Fiat, which employs about 80,000 persons in the area and makes 80% of the Italian motor vehicles as well as many other forms of transport. In the
Fig. 7.8 Distribution by provinces of persons employed in selected major branches of manufacturing in 1961.
lowland of north-west Italy several smaller towns have become major engineering centres, specialising usually in a particular range of products. Olivetti is in Ivrea, Necchi in Pavia, the Officine Meccaniche, the commercial vehicles side of Fiat, in Brescia. East of Lombardy engineering is less developed but in some centres such as Vicenza, Bologna and Monfalcone (ships) near Trieste it is well represented.

Away from the North Italian Lowland, Genoa is the leading engineering centre; lack of space for large factories has hindered the expansion of any branch of engineering except shipbuilding, for which it is the leading centre in Italy, having the famous Ansaldo shipyards. In the Peninsula there are very few engineering works even of moderately large size. Shipbuilding exists at Ancona and Leghorn, while the Piaggio words at Pontedera near Pisa, making Vespa motor scooters, is exceptionally large, employing several thousand persons, but it marks the southern limit of large-scale engineering in Italy. Although existing areas offer obvious advantages for continued expansion of engineering, such as availability of skilled labour, proximity of likely customers of products in other branches of engineering, availability of high-grade steel and the presence in the vicinity of an appreciable proportion of the Italian consumer market, there are signs that large-scale engineering is moving into the Peninsula, if in a modest way at present. Alfa-Romeo with Renault, for example, will soon be making motor vehicles at Pomigliano d’Arco, near Naples, and Olivetti have also opened a factory at Pozzuoli in the same area.

7.9 CHEMICALS

Of all the industries in Italy this industry is the most complex, both in the range of its own products and in its close association with other branches. More than any other major branch, too, it is intimately connected with one firm, Montecatini. Its products include fertilisers, paints and dyes, synthetic fibres and rubber, and pharmaceutical goods. It merges into the extractive industry in the mining of its raw materials, into the metallurgical in the production of coke and non-ferrous metals, and into textiles in the production of synthetic fibres. The large-scale development of the industry began well after 1900, but today Italy has one of the largest chemicals industries in Europe.
Fig. 7.8c shows the distribution of persons employed in chemicals, rubber and paper\(^1\) but may be taken to give a reasonably fair picture of chemicals alone. Total employment was 359,000. Milan province (109,000) as usual clearly stands out, this time with nearly a third, and Turin (32,000) follows, but away from these two centres many large chemicals works are to be found, both in the North and in the Peninsula and Sicily. In addition, oil refining (see Fig. 7.3) is often associated with chemicals.

Italian raw materials for the chemicals industry include sulphur and potash from Sicily and Emilia–Romagna, salt, iron and copper pyrites from various localities, and natural gas. Imported materials include oil, coking coal and phosphate minerals. The production of some items is widely distributed over the national area. Sulphuric acid (over 3m tons are produced each year) is obviously not easy to transport and, an ingredient of many products, is produced in some quantity in most provinces. In contrast some items are produced only in a small number of places; a large works at Cesano Maderno, north of Milan, for example, is the main producer of dyestuffs in Italy.

The following influences on location may be suggested: many home-produced minerals (already mentioned) are processed where they are mined. Likewise imported raw materials tend to be processed near importing ports (e.g. coke at Porto Marghera (Venice), at Apuania near La Spezia, and at San Giuseppe di Cairo behind Savona). Large chemical works are associated with several of the oil refineries (e.g. Ravenna in Emilia–Romagna, Augusta in Sicily). The production of fertilisers tends to be near markets, as at Crotone in Calabria, Port Empedocle and Palermo in Sicily, Ferrara in Emilia–Romagna.

Administration and research are largely confined to the Milan area and here Montecatini has its headquarters. Milan is also the main area for pharmaceutical products. Fig. 7.9 showing the main works of Montecatini, which employs 73,000 persons (in Italy), is included to illustrate the diversity of the Italian chemicals industry and to show the kinds of site chosen for factories.

\(^1\) Separate chemicals employment figures were not available for 1961 at the time of writing.
7.10 TEXTILES

More than any of the other major branches of manufacturing, textiles are concentrated in the north-west (see Fig. 7.8d). In 1961 Lombardy alone had 44% of all employment and Piedmont 22%. The leading provinces were:

- Milan 85,000
- Varese 59,000
- Vercelli 58,000
- Como 46,000
- Turin 45,000
- Florence 43,000

The present-day distribution of the industry to some extent reflects past distributions. The area along the foot of the Alps from Turin in the west right into Veneto in the east has long been the home of the silk industry, and Como was the leading centre; wool and flax were also manufactured in the same
zone in the past. When cotton began to be used widely a century ago new cotton mills were therefore put up in this general area. Florence and Prato in the Arno valley also reflect the long tradition of woollen manufacturing here. In the Peninsula, the Naples area is a minor concentration but is of relatively recent origin. The predominance of the north-west must also be explained in terms of the early start of modern factories manufacturing cotton in the area north of Milan, and the rise of the cotton branch to prominence.

The silk industry has been declining in recent decades but still employs some 10,000 persons, particularly around Como. Production is now about a quarter what it was in the 1900s when the industry reached its peak; the serious decline began in 1930, however. Silkworms are raised mainly in Veneto and much of the processing of raw material takes place here, but spinning and weaving are located mainly in Lombardy, in a large number of small mills. Competition from artificial fibres has been the main cause for the decline, but the industry survives, producing a luxury item mainly exported to the U.S.A.

The woollen textile industry was once associated with Italian wool but now almost all the raw material is imported. The modern industry, which now employs about 90,000 persons, has grown up in three distinct districts, which between them account for almost all the national output. The Biellese and adjoining Valsesia in Vercelli province, Piedmont, have about half the employment; the industry here is in a large number of moderate-sized mills mainly in small valleys in the foothills of the Alps. The other two districts centre on Schio and Valdagno in Vicenza province (Veneto) and on Prato, near Florence.

The cotton textile industry, depending almost entirely on imported raw material, is considered to be the first industry to grow up in Italy on modern lines, using machinery driven by steam power. It is highly localised, about half of the total Italian employment of some 150,000 persons being in the triangle Varese–Bergamo–Milan. Some of the spinning mills are large, but weaving is usually carried out in small factories, many of them in rural areas, drawing on one or a few villages for their labour, either on the relatively infertile high plain or in the lower ends of valleys in the Alpine foothills. Busto Arsizio and Legnano, towns rarely heard of outside Italy and
certainly not known as tourist centres, are highly industrialised towns with dozens of mills. Another concentration of cotton centres is the Val Seriana north-east of Bergamo. After Lombardy, Piedmont is the leading cotton textile region, with many mills on the plain and in the Alpine foothills west of Turin.

Other textiles manufactured in Italy include hemp, produced in the eastern part of the lowland, linen and jute. None of these rival cotton or wool in employment. Far more spectacular has been the rise of artificial and synthetic fibres, made from cellulose and hydrocarbons respectively. Italy has been one of the leading producers of rayon from cellulose, and is now advancing rapidly in the field of synthetic fibres, using mainly oil and natural gas as raw materials. These fibres are considered products of the chemicals industry, but they pass into textiles when woven. Many Italian textile firms use several different fibres and there has been a tendency for existing silk, cotton and woollen weaving factories to change over partly or entirely from natural to artificial or synthetic fibres.

Altogether, then, the modern textile industry is very much a monopoly of the north-west and hardly exists south of Florence, although there are a few modern mills around Naples and in Calabria. Since employment in the industry has recently been declining it seems unlikely that more new mills will be opened in the South or Islands.

7.11 FOOD, DRINK AND TOBACCO

The processing of food, drink and tobacco contrasts with the four branches of manufacturing discussed so far in that it is not concentrated in one or a few areas but occurs throughout the country, reflecting largely the distribution of production of the numerous agricultural items that need some sort of processing before consumption. In most instances it is advantageous to carry out this processing as near as possible to the areas of production. Since Italy imports some of its food requirements, food processing is also a feature of certain of the larger ports. Large urban centres tend to attract food processing industries too, especially those of a complex nature requiring more than one ingredient. Agricultural processing establishments range from simple workshops employing one or a few persons, distributed throughout the country, to large, highly capitalised and complex factories such as sugar
refineries, flour mills and confectionery makers employing hundreds, occasionally thousands of persons.

The list of leading provinces in terms of employment in the industry naturally tends to contain the provinces with a large population, but differs so strikingly from the other lists so far given that it is worth noting:

<table>
<thead>
<tr>
<th>Province</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milan</td>
<td>33,000</td>
</tr>
<tr>
<td>Salerno</td>
<td>20,000</td>
</tr>
<tr>
<td>Naples</td>
<td>19,000</td>
</tr>
<tr>
<td>Rome</td>
<td>13,000</td>
</tr>
<tr>
<td>Turin</td>
<td>13,000</td>
</tr>
<tr>
<td>Bari</td>
<td>12,000</td>
</tr>
<tr>
<td>Genoa</td>
<td>10,000</td>
</tr>
<tr>
<td>Verona</td>
<td>10,000</td>
</tr>
<tr>
<td>Lecce</td>
<td>10,000</td>
</tr>
</tbody>
</table>

A large part of the employment is in villages and small towns in areas in which certain crops are produced. Wine-making, the pressing of olives, the hulling of rice and processing of sugar beet are carried on in the areas, already indicated in the last chapter, in which these are grown. The raising of dairy cattle, too, has associated food industries, especially in certain parts of the Northern Lowland. One particularly important concentration of food processing is associated with the cultivation of tomatoes and other vegetables in the Naples–Salerno area. Apulia (excluding Foggia) prepares wine, olives and tobacco. Deciduous and citrus fruits are mainly sent off fresh and do not require processing. Much of the wheat finds its way directly to a limited number of large mills, though many small flour mills survive. Pasta factories are found in the South and in Sicily in areas of hard wheat cultivation. Milan, though not in an area associated with any special agricultural item, is a major food processing centre and specialises in panettone, a cross between bread and cake, widely consumed in the North. Piedmont and Lombardy are the chief regioni for confectionery, but Perugia has a large works specialising in chocolate products.

The food, drink and tobacco industry is therefore widely distributed compared with most other branches of industry in Italy but even so it is generally poorly represented in the regioni of the Islands and the Centre.

7.12 OTHER BRANCHES OF MANUFACTURING

Several other branches of manufacturing are of great importance to the Italian economy but space only permits a brief reference to the main features of certain ones.
In the production of building materials, cement is the most important item; Italy comes fifth in the world in its production. Suitable limestones and marls are very widely available but limestone is also imported from Yugoslavia for works on the Adriatic side of the Peninsula. There are cement works in every regione in Italy but two concentrations of large works stand out: those along the foot of the Alps in Lombardy between Como and Brescia, and those in the Monferrato area of southern Piedmont.

The manufacture of rubber, the raw material for which comes now from Italian petrochemical works in synthetic form as well as from South-east Asia in natural form, is an industry of particular interest because it is highly localised as well as being very much concentrated in one firm, Pirelli. Much of the employment in rubber is in and around Milan. Pirelli employs some 25,000 persons in Italy, more than half of them in one works (Bicocca) on the north-east side of Milan, making a very wide range of items including tyres, cables and innumerable consumer goods. Pirelli also has many smaller factories and their distribution, which is of interest, is shown in Fig. 7.9 (inset map).

The manufacture of wood is very widely distributed. Much of the production is still in small workshops in the artigianato sector of industry, furniture in particular being still largely made locally. There are two notable concentrations of furniture manufacturing in Italy, however, a cluster of modest-sized towns between Milan and Como, and a cluster of small towns south of Pisa in the Arno valley. The manufacture of paper, in contrast, is largely in modern factories and is tending to be concentrated more and more in the North at the expense of other areas such as the small concentration of paper mills in the predominantly agricultural Frosinone province between Rome and Naples.

The manufacture of clothing is one of the largest employers of labour in Italian industry. Knitwear and hosiery are closely associated with textiles and are found particularly in the north-west and in the Arno valley. Footwear, too, tends more and more to be a factory industry and is very much concentrated in Vigevano, south-west of Milan, and in Varese province to the north. Other types of clothing, on the other hand, are largely made by artigianato craftsmen, self-employed tailors or small groups of workers. Like the manufacture of wood
products, and food processing, the clothing industry is found throughout the country.

7.13 CONCLUSION

Lacking the attraction of large coalfields, Italian industrialists have tended to choose existing settlements as the most attractive places to put up factories. Many villages in the lowland close to the Alps in Piedmont and Lombardy had enough people to attract small textile factories, but most modern factories have been built in or near existing towns, particularly the larger interior centres and certain seaports. The Milan area is by far the largest single concentration of industry in Italy, having about a quarter of all persons engaged in manufacturing. A long way behind comes the Turin area with about one-tenth. In each of these areas there is the one very large centre and a considerable number of smaller centres. The Biellese is a miniature version of the Turin and Milan areas, industry being not only in the main centre, Biella, but dispersed among small towns and villages. Elsewhere in Italy industry is mainly in or close to sizable if not large single centres. Among the largest in terms of employment are the ports of Genoa and Greater Naples, each with industries and port facilities stretching miles along the coast, Venice and Porto Marghera, Trieste, the specialised oil refinery ports (see Fig. 7.3), and many interior province capitals of the North and Tuscany. South of the Arno and away from the coast, the Terni area with steel and chemicals, and Greater Rome with some light manufacturing, are the only important industrial areas. In addition to the Naples area, new nuclei are emerging at places on the coast in Apulia and Sicily.

For various reasons Italian industry does not make a great impact on the landscape. With no coal mines except in Sardinia, and with metal smelting relatively less important than in the coalfield countries, many features of British, French and German coalfield industrial areas are virtually non-existent. So are the genuine industrial towns with factories competing for land with commercial buildings in the centre and housing around the outskirts, a feature so common in older industrial countries. Only a few towns, including Legnano and Lecco, were so small when modern industry came that factories have grown up with the town. What is more, single storey factory buildings are very common, and factories are
therefore not usually very conspicuous, while electricity is derived unobtrusively from the grid and factory chimneys are rare. Many factories are encircled by high walls, partly a legacy of the security conscious Fascist period. The immensity of certain industrial concentrations such as Fiat in Turin, the large works on the north-east side of Milan and the industrial area of Genoa become apparent only when viewed from above.

Perhaps the most striking feature of the distribution of Italian industry is the high degree of concentration of several main branches in the regioni of Piedmont and Lombardy.

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>IIa</th>
<th>IIb</th>
<th>IIIa</th>
<th>IIIb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textiles</td>
<td>592</td>
<td>392</td>
<td>66</td>
<td>27</td>
<td>5</td>
</tr>
<tr>
<td>Metallurgical</td>
<td>192</td>
<td>109</td>
<td>57</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Engineering</td>
<td>1,369</td>
<td>772</td>
<td>56</td>
<td>114</td>
<td>8</td>
</tr>
<tr>
<td>Chemicals, etc.</td>
<td>359</td>
<td>199</td>
<td>54</td>
<td>26</td>
<td>7</td>
</tr>
<tr>
<td>Clothing</td>
<td>577</td>
<td>203</td>
<td>35</td>
<td>120</td>
<td>21</td>
</tr>
<tr>
<td>Wood, etc.</td>
<td>378</td>
<td>120</td>
<td>32</td>
<td>78</td>
<td>21</td>
</tr>
<tr>
<td>Non-ferrous metals</td>
<td>312</td>
<td>84</td>
<td>27</td>
<td>62</td>
<td>20</td>
</tr>
<tr>
<td>Food</td>
<td>433</td>
<td>109</td>
<td>25</td>
<td>131</td>
<td>30</td>
</tr>
</tbody>
</table>

I Employment in Italy in thousands  
IIa Employment in Piedmont and Lombardy in thousands  
IIb IIa as a percentage of I  
IIIa Employment in South and Islands  
IIIb IIIa as a percentage of I

To appreciate the degree of concentration it should be noted that Piedmont and Lombardy together have 11.4m people, or 22.4% of the total population of Italy (contrast col. IIb). Even in the branches of manufacturing least strongly represented they have more than their ‘share’. The South and Islands, on the other hand, have 18.2m or 37% of the population (contrast col IIIb). Even in the most strongly represented industries the South and Islands do not have their ‘share’. It is not of course implied that each region should have anywhere near the same share of each branch of industry as it has of population, but in Italy the disparity is extremely marked.

It is not surprising, therefore, that away from north-west

1 A relic of this attitude is the representation on large-scale maps of areas occupied by factories with symbols for trees, arable land or pasture.
Italy most towns emerge as service rather than industrial centres when classified on a functional basis. In the north-west, manufacturing employs more than half of the population engaged in non-rural activities in most larger communes. In the South and Islands, the reverse is true. The rest of the North and the Centre form a zone of transition.

The advantages of the north-west in particular and northern Italy in general may now be summarised. Firstly northern Italy was already more prosperous agriculturally than southern Italy in the last century and it has been widely assumed that more capital was therefore available here for investment in industry; at the same time the population was better educated. Secondly, although industry had declined and stagnated for a long time, there was still a tradition of commercial and financial activity (Venice, Milan) and of small-scale manufacturing (especially along the foot of the Alps). Unlike the more backward, feudal and rural Peninsula the North had politicians and entrepreneurs seriously interested in industry. For these reasons the North had a start. Thirdly, northern Italy was closer to the countries that became industrialised first in Europe, a dubious argument, however, since there was little trade across the Alps, most coming by sea. Later, proximity to the Alps, with the best hydro-electric potential in Italy, and availability of natural gas, have consolidated the advantageous position of the North.

With time the North has improved its position, accumulating skills and capital and becoming a large part of the national consumer market in terms of purchasing power, given the wide and constantly growing gap between North and South. The Peninsula has served as a market for the North but has never been able to develop its own assets either to become a large market itself or to develop industries that could compete with those of the North.

For social and political reasons, however, it has for some decades been considered desirable by Italian governments to narrow if not close the gap between North and South by industrialising the South, but not much was achieved under the Fascists. Once Italy was rehabilitated after the Second World War, however, serious attempts were made to encourage industrialisation in the South. Even so, as already pointed out, almost all the expansion between 1951 and 1961 took place in the northern half of Italy, and progress has been gratifying
only in a few districts: the Naples area, south-east Sicily, Bari, Taranto and Brindisi.

SUGGESTIONS FOR FURTHER READING

F. Milone (Editor): *La localizzazione delle industrie in Italia*, Rome 1937 (Consiglio Nazionale delle Ricerche)


Chapter 8

OTHER ACTIVITIES

3.1 SERVICE ACTIVITIES

In 1960 more persons were employed in services or ‘non-goods’ activities than in agriculture or in industry. These activities, which include commerce, transport and communications, and administration, employ about 8m persons or 40% of the employed population, and account, also, for about 40% of Italy’s gross domestic product. The distribution of persons employed in agriculture (see Fig. 6.1) is clearly broadly related to the physical conditions of the environment and in particular the quality of soils and suitability of rainfall; the distribution of persons employed in most branches of industry must be explained by a greater variety of factors. It is partly the result of attributes of different places, such as availability of sources of energy and raw materials, and partly a response to the presence and purchasing power of population—the market. Service activities are even less closely related to physical conditions and even more a reflection of the distribution of population. The general pattern of distribution of retail shops, banks, schools, transport services and so on is broadly similar to that of total population, though some important exceptions do occur and must be pointed out.

Transport workers are distributed roughly according to population, but they form a larger proportion of employed population in most towns than in most rural areas. They are particularly prominent in ports serving large hinterlands (e.g. Genoa, Venice, Leghorn) and in certain railway centres (especially Bologna).

Administration is not shared out evenly among communes according to population either. Rome, the national capital, clearly figures as the most prominent centre in this respect. Province capitals, with their various offices, also naturally have a greater proportion than the other communes in their provinces. About 20% is a common figure for the proportion of employed population in administration in medium-sized province capitals, but virtually every commune has at least a few; 2–6% is common in many. The following 1951 figures for selected communes indicate the proportions involved:
SERVICE ACTIVITIES

I Employment in administration
II Total employment
III I as a percentage of II

<table>
<thead>
<tr>
<th>Commune</th>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rome</td>
<td>176,547</td>
<td>623,328</td>
<td>28</td>
</tr>
<tr>
<td>Milan</td>
<td>57,744</td>
<td>605,724</td>
<td>9</td>
</tr>
<tr>
<td>Naples</td>
<td>55,380</td>
<td>300,431</td>
<td>18</td>
</tr>
<tr>
<td>Cremona</td>
<td>5,453</td>
<td>27,690</td>
<td>20</td>
</tr>
<tr>
<td>Salerno</td>
<td>5,891</td>
<td>27,992</td>
<td>21</td>
</tr>
<tr>
<td>Vailate</td>
<td>62</td>
<td>1,154</td>
<td>5</td>
</tr>
<tr>
<td>(Cremona province)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perito</td>
<td>20</td>
<td>1,058</td>
<td>2</td>
</tr>
<tr>
<td>(Salerno province)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In education, while primary schools are distributed roughly according to total population, secondary education is obviously more restricted and is largely confined to towns, higher education even to certain towns only. In Bologna, Padua and Pavia, for example, universities of long standing are a special feature though they do not greatly affect employment structure. All the largest towns in Italy now have a university.

In financial activities such as banking and insurance, certain centres are of outstanding importance—Milan employed 21,000 in 1951, Rome 20,000. In many smaller communes, on the other hand, finance is not represented at all.

8.2 Tourism

One branch of the Italian economy related mainly to service activities, tourism, is of great geographical interest. Many towns and districts in Italy are visited by large numbers of tourists, both national and foreign. Their patronage of certain places particularly affects hotels and catering but also influences retail sales and ultimately, from foreign visitors, the Italian balance of payments. Italy has more foreign visitors than any country in the world. In 1960, 18m foreigners visited the country, half of them however being merely day excursionists from adjoining countries; for example from the Swiss

1 In Europe, Italy is followed by France, Spain, West Germany, Switzerland and Austria. Like Italy, Canada has a very large number of day excursionists.
Ticino canton to Milan, or from the French Riviera to San Remo. The 1962 figure was 21m. Most visitors to Italy come from West Germany (4.6m), Switzerland (2.3m), Austria (2.1m), France (2.0m), and the U.K. (1.5m).

A record of both Italian and foreign visitors to hotels, boarding houses and other places providing accommodation is kept, and a study of province figures is sufficient to show the areas of greatest attraction. Length of stay must be taken into account since it tends to be appreciably shorter in most larger towns than in resorts. Fig. 8.1 therefore shows total visitor-days (prenenze) in 1959 by provinces, each circle being proportional to the total number of visitors to a particular province. It should be appreciated, of course, that commercial travellers and other routine visitors are included and tend to exaggerate the attraction of provinces with large towns. Persons staying in inferior accommodation (locande) are not included. Almost 60% of the visitor-days are accounted for by Italians themselves, the total being in 1959 34.4m Italians, 24.1m foreigners (the average length of stay for foreigners being 3-4 days). The largest number of visitor-days (in thousands) was recorded in the following provinces:

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Foreign visitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rome</td>
<td>5,938</td>
<td>3,403</td>
</tr>
<tr>
<td>Forli</td>
<td>5,598</td>
<td>2,819</td>
</tr>
<tr>
<td>Milan</td>
<td>3,222</td>
<td>1,359</td>
</tr>
<tr>
<td>Naples</td>
<td>2,975</td>
<td>1,299</td>
</tr>
<tr>
<td>Venice</td>
<td>2,786</td>
<td>1,997</td>
</tr>
</tbody>
</table>

The proportion of foreign to Italian visitors varies greatly from province to province, tending to diminish from North to South, as would be expected in view of increasing distance from Italy’s continental neighbours. Over 70% of the visitors to Venice and over half of those to several provinces including Bolzano, Como, Imperia and Savona, as well as Rome, are foreign. In contrast the number of foreign visitors is only a small proportion of the total in most provinces of the Peninsula and Islands: well under 10%, for example, in Ragusa, Caltanissetta and Enna in Sicily.
Fig. 8.1 Tourism.
Fig. 8.1 also shows some of the main places of tourist attraction, but there are so many that even many major centres are omitted. Selected places of particular interest are named on the map. Very broadly Italy counts on two attributes to attract the bulk of its foreign visitors: its favourable climate, and its historic towns, buildings and ruins. Other attractions include places of particular religious importance to Roman Catholics (Rome itself, Assisi, Loreto, many other shrines) and resorts exploiting mineral waters.

The attraction of the climate is twofold: the mountain areas are frequented for their snow in winter, their coolness in summer; the coastal areas are attractive for their mild climate in winter (particularly the Tyrrhenian side) and for their high temperatures (but not excessive humidity) and long reliable sunshine hours in summer. Away from the North there is a good chance at most times of the year that the weather in Italy will be superior to that in countries north of the Mediterranean. The most frequented coasts are the Riviera of Liguria and the Adriatic coast immediately south of the Po delta. The Naples area and Straits of Messina are also of considerable importance. Rome has its own coastal resorts, including the Lido, not however frequented much by visitors from elsewhere. Sardinia is now setting out to attract tourists on a large scale and sites are being offered for development, but its sea links with the North and therefore with other European countries are still inadequate.

With regard to historic sites, Italy is undoubtedly one of the richest areas in the world. The Peninsula and Islands tend to have more ruins: Greek at Agrigento, Syracuse and many other places; Roman, especially in the vicinity of Rome itself; and Etruscan in Tuscany. Many of the towns in the South and Islands are predominantly modern, but some, such as Lecce, with its Baroque buildings, are exceptionally fine. Most of the larger surviving medieval towns are in the northern part of the Peninsula and in the North Italian Lowland, Venice and Florence being of outstanding interest.

Italians call their land il bel paese, the beautiful country; most have never seen any other and their impression in fact seems to be based on views expressed by foreign visitors. Although many parts of the Alps, the mountain-backed coasts of the Peninsula, and much of the hill country would appeal as attractive natural landscapes to most people, much of Italy
is very monotonous and, especially in the South, very bare, hot and extremely depressing in summer, and cloudy and rainy and equally unattractive in winter.

SUGGESTION FOR FURTHER READING

Chapter 9

THE REGIONS OF ITALY

The division of Italy into suitable regions for the purposes of description presents many problems and the enormous variety of both physical and human conditions makes it possible to devise dozens, even hundreds of distinct units. For the purposes of this part of the book, the question of choosing suitable regions is avoided and Italy is divided into four main areas, North, Centre, South and Islands. These are further subdivided on the basis of the 19 regioni. The choice of the regioni as the basis for description does not imply that any abrupt change is encountered along their boundaries. Unlike the provinces, they have not even had any administrative function until very recently. Except where separated by sea (Sardinia, Sicily) or by mountains (Liguria) they merge imperceptibly into one another and in their description, therefore, excessive adherence to their precise boundaries must be avoided. Many Italian geographers have used the regioni and with some justification at least, since statistical data are readily available for them. Before proceeding with the description of each regione, however, it seems opportune to distinguish some basic regions in the country so that the reader will not later lose sight of simple, fundamental contrasts, which of course bear no relationship to the limits of the regioni. Fig. 9.1 therefore shows the main geographical regions of Italy based on a consideration of both relief and economic activity. The order in which they are treated in the following summary is entirely arbitrary.

1. The Alps. These are the highest and most rugged part of Italy. The cultivation of crops is extremely limited and farming is dominated by dairying on the basis, mainly, of natural pastures. More than three-quarters of the hydro-electricity produced in Italy and much of the timber come from the region. Thanks to the need to cross the Alps at various points, there are several important routeways, using the main valleys and helping to reduce the isolation of many of the less-accessible valleys. Industry is limited to a few localities and there are no large towns. Tourism flourishes in some areas.
2. The North Italian Lowland. Flat or gently sloping, fertile and in places irrigable, this is Italy’s most productive agricultural area. A very large proportion of the lowland is under field crops, but emphasis varies from one part to another. Wheat, maize, livestock fodder crops, rice, sugar beet, vegetables and vines are all grown in one part or another, and yields are much higher than elsewhere in Italy. Previously without minerals of more than local importance, the lowland has now become Italy’s chief source of natural gas and is
covered by western Europe's most extensive pipeline system. Away from region 3 (below) there are a number of manufacturing concentrations: apart from Trieste, Venice and Bologna, all distinguished on the map, Vigevano, Pavia, Verona, Vicenza, Padua, Modena, Parma and Ferrara are all more than simple commercial and administrative centres.

3. *Industrial north-west Italy.* Roughly within the area distinguished, manufacturing overshadows agriculture in terms of employment. Italy's most highly industrialised communes lie along an axis following the foot of the Alps between Turin and Brescia. Industrial settlements spread from this line both up valleys (e.g. behind Bergamo) and into the lowland away from the foothills (Turin and Milan are both some distance from the Alps). The largest number of industrial centres is between Milan and the Alps, while Milan with certain adjoining communes has half a million persons in manufacturing and Turin over a quarter of a million. In this region there is a total population of about 7m inhabitants and a large proportion of Italy's textiles, engineering goods, chemicals and high grade steel are produced here. Milan is the financial and commercial capital of Italy.

4. *Ligurian Riviera.* This narrow mountain-backed strip of land is so distinct that it must be separated from neighbouring areas. Agricultural land is very limited but very productive. There are three major ports, including Italy's largest, Genoa, and some manufacturing, especially at Genoa (about 100,000 persons). The tourist industry of the region enjoys worldwide fame.

5. *Mountains of the Peninsula and Islands.* This region is divided among so many regions in Chapters 11–13 that it is important here to point out some characteristics found throughout. Though of widely differing types of rock (mainly sandstone in the north, limestone in the centre and crystalline in the extreme south and Sardinia) the Apennines and the mountains of the Islands are everywhere lower than the Alps and less of a barrier to movement. For their general altitude (1,500–2,500 metres) they are very rugged, however, and steep slopes, poor soils and low rainfall in the summer months (in spite of quite a high annual total) make them less productive on the whole than the Alps. Natural pastures are poorer, forest growth more limited and the hydro-electric potential much more restricted. As in the Alps, crop farming is not widespread, but the Apennines
do have more cultivable valleys and basins, especially in the central part. There are no large towns in the region and very few industries, but several trans-peninsula railways pick their way across.

6. *Hills and Lowlands of the Peninsula and Islands.* Except where the mountains extend to the coast itself they are usually flanked by hill country, lower, but in places still very broken. Coastal lowlands and interior basins, though important locally, are limited in area. Soil conditions vary enormously and the most fertile and very densely peopled lands have been distinguished as region 7. Region 6 generally has only a moderate density of population, while in places (notably in southern Tuscany and much of Lazio, in Basilicata and in much of Sardinia) it is thinly populated. Almost everywhere yields of the principal cereal, wheat, are low, while in places conditions are only suitable for the vine and the olive. Livestock farming is limited, extractive industries are confined to a few areas and there are hardly any large-scale industries.

7 a–d. Four particularly productive and densely peopled parts of the Peninsula and Sicily have been distinguished. The Arno valley between Florence and the sea has about 1 1/2m people (mixed farming, considerable manufacturing), the Naples area about 3 1/2m (vegetables, fruit, cereals, limited manufacturing), Bari and the Salentine Peninsula about 2 1/2m (wine, olives, very limited manufacturing), and the fertile coastlands of southern Calabria and northern and eastern Sicily about 2 1/2m (citrus fruits, wine, very limited manufacturing).

8. *Rome.* The national capital forms a concentration of some 2 million persons quite out of proportion to the resources of the poor area in which it is located. As well as being the seat of national government it is a religious and tourist centre of international significance.

9 a–j. In addition to Milan, Turin and Rome, which are important enough to form special regions of their own, ten other communes with over 250,000 inhabitants have been distinguished, since most if not all are major regional centres, too large to be accounted for merely in terms of local needs. All except Trieste and Messina clearly occupy a high level in the Italian urban hierarchy through their considerable spheres of influence and many functions.
Chapter 10

NORTH ITALY

10.1 INTRODUCTION

The North differs from the rest of Italy in several important respects. The Northern Apennines, though crossed in many places, form a considerable barrier to movement between the Peninsula and the Northern Lowland and stand out as a relatively thinly populated area between two more densely populated areas. Climatically, the continentality of the North may be noted, while economically it is more highly industrialised and more prosperous agriculturally than most of the rest of the country, though within the North itself there are contrasts. In addition it has closer links than the Peninsula with neighbouring countries, thanks to the many rail and road passes and tunnels across the Alps.

The contrast between Alps and lowland is so marked that it would be absurd to say the North was a single region solely on a physical basis. If on the other hand the complementary nature, economically speaking, of adjoining sections of Alps and lowland is appreciated, then the North can be considered a well-defined 'human' region, a large densely populated lowland area almost encircled by the thinly populated but tributary Alps and Apennines, but bounded by the sea at the eastern end. The international boundary, passing through virtually uninhabited high mountain areas except in a few places (the Riviera, the Swiss Ticino projection and the Trieste–Gorizia area), gives further strength to the concept of the North as a distinct region; for most of its length the boundary actually follows the main watershed. Even on the southern side there are marked changes where North and Centre meet: in the west, the mountain-backed coast of Liguria changes to the lowland coast of Tuscany; in the east, in contrast, the Apennine foothills reach the coast, at Cattolica, precisely where Emilia–Romagna and the Marche meet; along the Northern Apennines the main watershed is used as the boundary much of the way but, in places between Florence and Bologna, Tuscany extends north of the watershed.
The North has only 40% of the area and 45% of the population of Italy but accounts for about half of the agricultural production and two-thirds of the industrial production. As well as having the largest area of good quality agricultural land and the best forests, it has most of the hydro-electric potential and of the proved reserves of natural gas of Italy. In fact it is better endowed than the rest of Italy in virtually every way, lacking indeed only the climatic conditions for the cultivation of certain crops favoured by warmer temperatures further south: citrus fruits, the olive, the vine for certain types of wine, and hard wheat. Not surprisingly, the northern Italians have a higher standard of living than those living south of Florence except for those in the commune of Rome (see Chapter 11).

Figs. 10.1 and 10.2 show the various distributions in the North. Fig. 10.1a shows relief and drainage, but no attempt has been made to show the complex nature of the plain itself, described briefly below. In Fig. 10.1b only certain important types of agricultural specialisation have been distinguished. Fig. 10.3 shows the gas pipeline system separately.

The Italian Alps extend about 700 km from the Julian Alps in the east to the Maritime Alps in the south-west, the Cadibona Pass behind Savona being the accepted break between Alps and Apennines. They vary in width from a mere 15–25 km in the west, where there is an abrupt descent from the crest to the lowland of Piedmont, to 130–160 km at their widest in the Trentino–Alto Adige. The Ticino canton, a wedge of Swiss territory extending south to the very edge of the plain, divides the Italian Alps into two sections of equal length, and it is here that the more simple relief of the narrower western half, with all the main valleys transverse, gives way to the more complicated, wider eastern area with its widening outcrop of massive limestones, its secondary ranges parallel to the main one, and its longitudinal valleys.

The main watershed, it should be appreciated, does not necessarily follow the highest points. On the Italian side, for example, the Gran Paradiso in the west and the Ortes-Cividale in the east are higher than the actual watershed in their respective neighbourhoods. In the east, detached high mountain areas such as the Adamello and Marmolada stand well to the south of the main range.

Generally there is an area of foothills between the Alps and the plain, either formed of morainic material or comprising
Fig. 10.1 North Italy: a, Relief and drainage. b, Land use. Note: in map a, small letters indicate rivers, capital letters indicate relief features, and numerals indicate lakes.
Fig. 10.2 North Italy: a, Towns and sources of energy. b, Communications.
the last and lowest spurs of the mountain area itself. In most places however there is a clear-cut break in slope between foothill and plain.

The general level of the Italian Alps varies greatly from one area to another. From the low Cadibona Pass in the south-west (459 metres) the level of the crest rises to 2,000–3,000 metres in the Maritime Alps, 3,000–3,500 metres in the Cottian Alps and 3,500–4,500 in the Graian and Pennine Alps. The lowest passes used by main roads, from Tenda round to the Simplon, are all close to 2,000 metres. The highest points of all occur along the northern side of the Valle d’Aosta (Monte Bianco – Mont Blanc – 4,810 metres, Monte Rosa area several over 4,500, Cervino – Matterhorn – 4,478). East of the Ticino the level of the crest is both lower and less constant, with a maximum of over 4,000 metres only in the Bernina, and a general level of 2,500–3,500 in the Alto Adige. East of the Alto Adige the international boundary leaves the main crest of the Alps, which continue in Austria, and follows the summit of the much lower Carnic Alps (1,500–2,500).

Almost everywhere in the Alps, except along the southern fringe below about 1,000 metres, the landscape has been profoundly affected by glaciation in the Quaternary period and for considerable periods during the height of glaciation valley
INTRODUCTION

glaciers spread out into the plain, leaving terminal moraines. Today, the areas of permanent snow are limited and glaciers small, but the landscape with its sharp peaks, hanging valleys and, especially in the east, complex drainage pattern, clearly reflects the recent influence of glaciation.

Even the floors of the main valleys in the Alps are rarely more than 2–3 km wide and usually they are narrower than this; sometimes, as in the Dora Baltea, the valley passes through a gorge before emerging on the plain. In the central part, several valleys have been overdeepened by glaciation and are occupied by long narrow lakes with precipitous mountain sides in places.

Although so restricted in width, the main valleys form the principal axes of economic activity, having on their floors and lower slopes much of the better agricultural land, as well as all the larger towns and industries, and carrying the main roads and railways from the plain into the mountains, in many cases to a pass or tunnel across the main watershed. In the tributary valleys and intervening mountain areas pastoral activities and forestry dominate the rural economy, while complicated tunnels collect water and, often, reservoirs have been built to store it for the numerous hydro-electric power stations, many of which are in the main valleys themselves. Catering for tourists is another activity of considerable importance in certain parts of the Italian Alps, a favourite area being the Dolomites. Large-scale modern industry is limited in the Alps in spite of the availability of hydro-electric power and economic minerals are disappointingly few. Industry is mainly confined to a few of the larger valleys which also happen to be the main lines of movement between North Italy and countries across the Alps: the Valle d’Aosta, the Val d’Ossola and the Adige valley. The lower parts of certain smaller valleys in Lombardy between Lakes Como and Garda are also highly industrialised but these industries are really a continuation of the lowland industrial region north of Milan.

Pastoralism and forestry give rise to a sparse rural population, while the running of hydro-electric stations, once they have been constructed, employs very few persons. Tourism and manufacturing, again, give direct employment only to a limited labour force. Not surprisingly, therefore, many of the less accessible communes in the Italian Alps have for many decades now been characterised by depopulation or at least
by a slower rate of increase than the national average. The decline in population has been most marked in the Alps of Piedmont.

The products of tributary valleys naturally tend to gravitate towards the main valleys and many of the towns are at points where a secondary valley joins a main valley (Merano, Sondrio, Aosta). In a similar way the economic life of each main valley, together with its tributaries, tends to be orientated towards the nearest large town on the plain: the Val di Susa to Turin, the Adige valley to Verona and so on. This is to be expected, but the situation is emphasised by the difficulty or impossibility of moving from one main valley to the next. In the west, where the Alps are narrow, in order to pass from one valley to the next by road it is essential to emerge on the plain and pass to the entrance of the next, thereby making a considerable detour. In the east, where the Alps are wider, many passes between main valleys carry roads.

Looking across the plain from the roof of Milan cathedral, it is possible on a clear day to see the great snow-capped wall of the Alps to the north and the lower but still imposing line of the Apennines to the south. To the east the plain continues as far as the eye can see. Only from such a vantage point can one appreciate the immense size of the North Italian Lowland; from end to end, taking into account the north–south projection south of Turin, it is not much less in length than the Alps – 550 km. To anyone travelling across the plain it appears to be dead flat except near the foot of the Alps, or where occasional detached hills occur within it. In reality it has a general slope from west to east, from about 200 metres at Turin to sea level some distance west of the Po delta. There is also a slope from the Alps and the Apennines towards the centre of the basin, and the Po follows this lowest west–east axis which, west of the Mincio, is much closer to the southern limit than the northern limit of the plain, the river presumably having been pushed south by the much greater amount of material carried by the great rivers from the Alps than by the more modest streams from the south. The rivers compromise by running obliquely across the plain (see Fig. 10.1a). East of the Adige the plain slopes directly to the coast.

Structurally the plain itself is divided into several distinct parts. Along the Adriatic coast there is a belt of lagoons varying in width and undergoing reclamation. Behind this is the
present flood plain of the lowland rivers, extending far inland to the west along the Po and up the main tributary valleys as well as up the independent rivers to the east. This flood plain is about 40 km wide in the Polesine. It lies below the level of the Po and Adige, and in the east is actually below sea level. If these rivers break their banks, as has occurred often in the past when more water than usual flows from the Alpine tributaries, usually in autumn, serious damage is done and the towns of Rovigo and Ferrara as well as smaller settlements may be completely flooded. At about Cremona the flood plain is only a few kilometres wide and further upstream, both along the Po and along its tributaries, it is a strip 2–3 km wide, strewn with gravel and characterised by braided drainage, forming a trench incised in the next level of plain, the so-called terraced plain. The flood plain abuts against this in a low cliff on the north but merges imperceptibly with it in the south. This older plain, above the level of the present rivers, is wider to the north of the Po than to south and is traditionally divided into high plain and low plain, separated by a zone of springs (not a line) which is several kilometres wide in some places and hardly evident in others. Surface drainage is more dense south of the zone of springs than north of it. The low plain (and the flood plain) are generally more fertile than the high plain and in Piedmont and Lombardy the low plain has the added advantage of offering the possibility of irrigation, which is impossible both in the high plain, where the terrain is unsuitable, and in the flood plain, where the land is too low. In Emilia–Romagna, irrigation is limited by the small volume of water flowing from the Apennines in the summer months.

Agriculturally the North Italian Lowland contrasts completely with the Alps, for almost all the surface is used for arable purposes; only infertile gravels along the foot of the Alps, gravel-strewn beds of the main rivers and the coastal marshes are not used for some purpose. Farming practices, land tenure systems, crops grown, and density of rural population vary greatly in the plain, but almost everywhere arable farming is dominant even if directed towards providing fodder for livestock. Yields per unit of area are much higher than in the Peninsula and flat conditions facilitate mechanisation, thus making higher yields per farm worker possible.

In contrast to its agricultural richness, the Northern Lowland has been virtually without mining or quarrying except
for construction materials until the exploitation of natural gas after the Second World War. Fig. 10.3 shows the main areas of natural gas production and the large pipeline network (as in 1960) for its distribution.

The Northern Lowland is the most highly industrialised part of Italy, but in terms of actual utilisation of the land, industrial establishments are a minor competitor. Most of the larger factories are in or near the larger towns except in the area north of Milan, in the vicinity of Turin, and in places along the foot of the Alps. Towns are spread at fairly regular intervals in the Northern Lowland and the road and rail network is both dense and virtually unimpeded by physical obstacles, the Po itself being the chief hindrance to north-south movement and the incised courses of its Alpine tributaries an additional hindrance to east-west movement on the northern side of the lowland.

The third main physical division in the North is the hill country and relatively low mountain area south of the great lowland. In the west the hill country of the Monferrato and Langhe intervenes between the mountains backing the Ligurian coast and the lowland. Behind Genoa there is a projection of lowland, the Marengo, south of the Po. East of this the Northern Apennines proper begin, rising from the plain through broken hill country to crests 1,000–2,000 metres high. The hill country is more densely populated and intensively farmed than the mountains. There are few minerals, only a small hydro-electric potential, few towns and virtually no industries except immediately behind Genoa and Savona. Many routes cross the area, however, and nowhere is as inaccessible as the most remote parts of the Alps.

10.2 Liguria

Liguria is one of the most distinctive regioni of Italy. Traditionally and economically it is part of the North but climatically it has some features of the Peninsula. Unlike the rest of north-west Italy, too, its existence is intimately connected with the sea. Almost 250 km in length but only 10–30 km wide, it extends round the northern rim of the Gulf of Liguria and is backed by mountains, the crest of which is mostly even closer to the coast than the boundary of the regione itself and reaches 2,000 metres at its highest, though lower in the central part where there are several passes around 500 metres. Short rivers
descend to the coast forming at their mouths small plains, which provide the only flat or gently sloping land in the region. These are separated by precipitous headlands which make movement along the coast extremely difficult.

The western half is known as the Riviera di Ponente, the eastern the Riviera di Levante. The two differ appreciably in certain respects. In particular the Levante has even smaller plains than the Ponente and even steeper mountains behind, with valleys parallel to the coast and more difficult access inland, as well as a heavier rainfall.

Half of the total area of Liguria, mainly the part above a few hundred metres, is forested, chestnut woods being very common. Less than one-quarter is used for field or tree crops, but the actual agricultural land, either in the small plains or on the painstakingly terraced slopes, is intensively cultivated. Properties are small, plots of land minute and labour per unit of area very high. Much of the land under field crops grows vegetables, while in the extreme west, flowers are cultivated. The tree crops, mainly on the slopes, terraced or otherwise, are the vine, other deciduous fruits and even the olive and citrus fruits. Agriculture takes the form almost of horticulture and the impression that the Riviera coast is one long garden is strengthened by the presence of many villas, grandiose and more humble, set in gardens often containing exotic plants, the presence of which is made possible by the mild winter. The coast, indeed, is almost one continuous semi-urban area with numerous large and small resort towns and three main ports irregularly distributed along it. The link from end to end is inadequate: a railway, single-track mainly, passing through some 50 tunnels in the Riviera di Ponente alone, and a main road quite inadequate for the heavy traffic.

There is a striking contrast between the narrow coastal strip and the mountains behind, with their small stagnating and sometimes virtually abandoned villages with an economy based on forestry and poor pastures. The Riviera has long been appreciated and frequented for the mildness of its climate, but until the relatively late construction of a railway along this difficult coast in the 1870s, it remained the preserve of the élite. In the last hundred years the tourist industry has expanded enormously and there are now several dozen resorts of considerable size, some of them of international reputation: San Remo and Rapallo in particular. Although visited by
tourists from all over western Europe the largest numbers come from nearby Piedmont (especially to the Ponente) and Lombardy (to the Levante). Resorts function throughout the year but are more active at certain seasons than at others, benefiting from the mild winter conditions as a refuge from colder areas to the north and exploiting the hot summer months for bathing.

In spite of the widespread distribution of agricultural and tourist centres, 56% of the population of Liguria is in three communes, Genoa (775,000), Savona (71,000) and La Spezia (121,000). These towns are both leading seaports and industrial centres. Genoa, in addition, is a great regional centre of commercial, financial and cultural importance. Savona and Genoa owe their existence to the presence of relatively low though by no means easy passes to the lowland behind, and their precise location to modest-sized but well-protected inlets which have been used by shipping now for more than 2,000 years. Genoa has a more direct access than Savona to the North Italian Lowland and this appears to account for its much more spectacular development in the past and much greater trade and industrial capacity at present. The modern growth of La Spezia has been due more to its usefulness and therefore choice as a naval port, with its easily defended Gulf, than to its position to serve as a commercial port. Access to the interior lowland is much more difficult than from Genoa or Savona, while Pisa in the Middle Ages and Leghorn more recently have been the traditional ports for the Arno valley further south. Its hinterland does extend into the Northern Lowland but much of its trade is in oil, imported crude for its large refinery and redistributed refined partly by land, partly by sea. Most of the traffic of Savona, too, is in crude oil, piped to a refinery near Novara, or in coal, sent inland by rail to the industrial north-west or by aerial ropeway to Cairo Montenotte in the mountains behind for use in the gas and coke plant, chemicals works and the thermal electric power station.

Genoa is one of Europe’s leading seaports and one of Italy’s leading industrial centres. The old town grew up on a hilly site overlooking a small but adequate and easily defended harbour about 3 km east of the valley leading to the Giovi Pass. From here the built-up area has spread along the coast about 15 km west to Voltri and 10 km east to Nervi. So steeply sloping is the land behind, however, that except up two valleys the town extends inland only 2–3 km (see Fig. 10.4b). The
Fig. 10.4 Turin, Genoa and Venice. All three maps are on the same scale.
result is a very inconveniently shaped and unwieldy urban area, a situation further aggravated by lack of even moderately steeply sloping land. Further expansion, therefore, is costly and difficult, but has been made possible partly by the construction of tall buildings, both for offices and for flats, and partly by reclamation along the coast for enormous port works and industrial sites. The main industrial concentration is in Cornigliano and Sestri. About 18,000 persons are employed in the metallurgical industry, and nearly 50,000 in engineering, out of over 100,000 in manufacturing. The production of steel and the construction of ships are the main industries. Many of Italy's largest and best known ships have been built in the Ansaldo yards in Sestri Ponente: the 51,000-ton Rex in 1931, the Andrea Doria (29,000 tons) in 1951, the Cristoforo Colombo (29,000 tons) in 1953, the Leonardo da Vinci (33,000 tons) in 1958, and the Michelangelo (43,000 tons) in 1964. Three railways, two of them double track, two main roads, an autostrada and two oil pipelines link Genoa with the interior, but these are not adequate to cope efficiently with the traffic. Movement by road and rail along the coast is even more difficult, but improvements are being made.

10.3 PIEDMONT AND THE VALLE D'AO stamina

Piedmont\(^\text{1}\) occupies the western end of North Italy and as a region is clearly defined to the north, west and south by the Alps. Eastwards the plain and hill country continue into Lombardy. Piedmont contains all three main relief elements, mountain, plain and hill in sharply defined areas. The relatively narrow western extremity of the North Italian Lowland, drained by the Po and its tributaries, extends north and then east to form the economic core and most densely settled part of Piedmont. It ends abruptly against the towering Alps on the south, west and north, but on the south-east is limited by the hill country of the Monferrato and Langhe. East of these hills is a smaller lowland embayment south of the Po, the Marengo, rising gradually to the Apennines behind Genoa.

The Alps of Piedmont fall into three main sections. From the Maritime Alps to the Gran Paradiso they are 20–50 km wide, and drained by small rivers descending steeply to the nearby lowland. Precipitation is in general less than elsewhere in the

\(^1\) For convenience Piedmont includes the Valle d'Aosta throughout this section.
PIEDMONT AND THE VALLE D’AOSTA

Italian Alps and very low in the lower parts of the valleys. Forests are not so extensive as elsewhere and pasture less productive, a feature also of the French side of the Alps here. Rural depopulation has been considerable and there has been little to diversify the predominantly rural economy except in the Valle di Susa which carries the important road (Mont Cenis) and rail (Frejus) routes over the Alps on the direct Paris–Lyon–Turin–Rome line, and in certain tourist centres, the most notable being Sestriere.

North of the Gran Paradiso is the second section, the Valle d’Aosta, a single province with the status of a regione, and a much larger and physically, culturally (French speaking) and economically more distinct valley than those further south. It is almost encircled by very high mountains and the Dora Baltea escapes to the lowland only through a gorge, overlooked by the ruins of several imposing castles. At the other end, two road passes, the Great and Little Saint Bernard passes, lead to the Rhône and Isère valleys. There is a little arable land along the valley floor and farming is based largely on grazing, with a growing tendency for fodder to be brought to cattle and for the traditional transhumance between pastures at different levels to decline. Aosta (30,000), the regional capital and only sizable town, has the only important industrial establishment in the valley at Cogne, an iron and steel works using local ore, but there are several important hydro-electric power stations. In spite of the two high passes to Switzerland and France, the valley has remained a backwater until now. The opening of two road tunnels, one under the Great Saint Bernard (carrying also an oil pipeline) and one under Monte Bianco into France (11.6 km in length), put it on one of Europe’s great new international road axes, and will no doubt greatly boost its tourist industry.

The third section lies between the Valle d’Aosta and Lake Maggiore and has two main valleys, the smaller Val Sesia, with some small industries in the lower part, and the larger Val d’Ossola, which carries the road and railway from the Simplon to the lowland, has many medium-sized hydro-electric power stations (see Fig. 7.6a) and, at Domodossola and Villadossola, some heavy industry. Though in Piedmont, the Val d’Ossola is orientated economically to Milan in Lombardy rather than to Turin.

Across the plain from the Alps is the hill country of Piedmont,
a sharply dissected area though rarely more than 200 metres above the level of the plain except where it rises towards the Apennines. The narrow flat plain of the Tanaro separates the Monferrato from the somewhat higher Langhe. A large part of the area is devoted to tree crops; in Asti province over one-third of the area is under vines, almost as much as is under field crops, an exceptionally high figure for the North. The hill country therefore supports a high rural density of population and is still heavily dependent on agriculture, for in spite of being crossed by several railways including the main Turin–Genoa route, there is little industry. Asti (60,000) remains a quiet provincial centre. Between Alessandria and the Giovi Pass to Genoa, however, Novi Ligure, Tortona and some smaller places have become industrialised, and Alessandria (92,000) has industries as well as service functions.

The main area of lowland covers less than a quarter of the area of Piedmont and is much narrower than further east, there being only about 10 km between the Monferrato at Turin and the foot of the Alps at Rivoli. Further, the soils of the lowland in Piedmont are somewhat less fertile on the whole than elsewhere. Piedmont is not therefore so proverbially rich, agriculturally, as Lombardy or Emilia–Romagna. Even so, almost all the plain is cultivated and yields are high by Italian standards. The most productive area lies in the east, where around Vercelli and Novara the Cavour Canal, taking water from the Po at Chivasso, and other canals, taking water from the Dora Baltea, allow the low plain to be irrigated, and rice, maize and fodder crops to be cultivated. Elsewhere wheat is the principal cereal. Throughout the plain, cattle are raised in large numbers.

The industrial and urban life of Piedmont is dominated by Turin, with about 1 million inhabitants, for all the other towns have fewer than 100,000 inhabitants. Novara (86,000) is an industrial centre of some importance with textiles and chemicals, and to the east and north a number of smaller centres are also industrialised. Like the Val d’Ossola to the north, however, the Novara area belongs to the Milan area of Lombardy rather than to Piedmont. The Biella area with its famous woollen textile industry forms a second industrialised area, while Ivrea has the large Olivetti factory. South of Turin, towns such as Cuneo (46,000), Saluzzo and Mondovi are mainly service centres and this area, in spite of having access
to Savona, is more of a backwater than the plain east of Turin.

Turin is fourth in population among Italian towns. Though a centre of some importance in Roman times it remained much less influential than Milan or Genoa until about 250 years ago when it emerged as the chief centre of an important independent political unit. Its progressive leaders were intent on modernising Piedmont even before unification, and Turin perhaps reached the peak of its importance in Italian life a century ago when it served as the capital of the newly created state for a few years. Since unification it has once again been overshadowed by Milan and its position in the backwater of the western part of the lowland (the Mont Cenis route is not so busy as the Saint Gotthard and Simplon routes converging on Milan), the more limited population, and less promising agricultural land and hydro-electric potential of its region might have reduced its relative importance still further had not the Fiat Company been such a great success.

Important though it is as a regional, cultural, commercial and financial centre, Turin would not have reached its present size without rapid industrial growth. The whole province has 400,000 persons employed in manufacturing, over half of them in engineering; metallurgical, textile and chemicals branches are also well represented. Most are in Turin itself or in the small towns and overgrown villages within a radius of about 15 km. Fig. 10.4a shows the Turin district and Fig. 10.7 the premises of Fiat in Turin itself. Some 3,500 cars were being produced daily in 1962–3.

10.4 LOMBARDY

Being a continuation of the Alps and lowland from Piedmont, Lombardy naturally has many features in common with its neighbour, but some basic differences must be noted. Although slightly smaller than Piedmont (even without the Valle d’Aosta), Lombardy has nearly twice as many people. Almost half is plain, in contrast to less than a quarter in Piedmont, and agricultural production is therefore greater. Employment in manufacturing is more than twice as great, and Greater Milan is twice as large as Turin. The more central position of Lombardy in the North should also be borne in mind.

Lombardy may be divided physically into two main areas,
a northern mountain area and a southern lowland area. In fact there is a transition through the foothills and high plain from one type to the other. The lowland extends south only to the Po except for a southerly projection of Pavia province extending south into the Northern Apennines, which in every respect resembles the neighbouring parts of Piedmont and Emilia, not the rest of the Lombard lowland.

The Alps of Lombardy differ from those of Piedmont in several respects. They are much wider towards the east, though not comparable in the west on account of the projection of Switzerland; they have a deep longitudinal depression, the Valtellina, isolating the lower but still formidable Orobian Alps from the main ranges further north; and the lower ends of several valleys are occupied by lakes, the two largest, Lakes Maggiore and Garda, marking the western and eastern limits of Lombardy. In the west the upper valleys of the Ticino, Adda and their tributaries can only be reached along the shores of Maggiore, Lugano or Como. Several valleys lead to passes over the Alps, heavily used at some stage in the past if not now. The most famous of all is the Saint Gotthard, in Switzerland, carrying road and railway towards central Switzerland and the Rhine. To the east are the Spluga and Maloia road passes above Chiavenna, and the Bernina with a road and a minor railway. The access valleys on the Italian side to both the Maloia and the Bernina belong to Switzerland. Elsewhere Italian territory extends across the watershed in a few localities. There is some exchange of electricity between Italy and Switzerland from hydro-electric power stations on the ‘wrong’ sides of the watershed.

The Lombard Alps, like the Alps of Piedmont, have little land suitable for cultivation. The vine is cultivated in the Valtellina on a small scale but otherwise farming revolves round dairying, while the forests and hydro-electric power stations are other economic activities. In the smaller valleys running south from the Orobian Alps to the plain the mining of iron ore and other metals has long been established, but with the exhaustion of ores and the abandonment of charcoal smelting, there has been a relative decline, leaving a tradition on which new industries have emerged. Lecco continues as a metal-working and engineering centre, the Seriana valley above Brescia has numerous textile mills, the Val Camomonica is reviving its iron and steel industry and the Val Trompia
makes metal parts for engineering industries. Vobarno and Volciano near Lake Garda form yet another industrial concentration in the foothills. These industrial valleys are all associated with the Milan industrial complex.

Very different are conditions along the shores of the lakes. The great scenic attraction of these and the somewhat milder winter conditions resulting from the presence of considerable water surfaces have made them both popular tourist areas and places for people to retire in. The occasional olive and citrus trees, though not a commercial proposition, and the magnificent trees and flowers grown in the lake-side gardens and parks, make the lake shores into miniature 'Rivieras'.

In complete contrast to the Alps is the 'low plain', roughly south of an east–west line through Milan and Brescia. This area, unlike the high plain and the foothills to the north of the line, has very few industries, but is one of the most productive agricultural areas in the whole of Italy. As in Piedmont, water is taken from the Alpine rivers, this time particularly the Ticino, and also from the streams emerging along the spring zone, to grow rice and maize, to achieve high yields of fodder crops or to keep water meadows (marcite) from which hay can be cut most of the year. The Lomellina is the special rice growing area, while dairying predominates further east around Lodi and Cremona. The surface is almost dead flat and the boundaries of the medium-sized fields are usually marked by an irrigation channel and rows of poplars. In the rice-growing area each field has to be contained by banks for flooding. The characteristic unit of land tenure and settlement is the cascina, a large farm with farm buildings and workers' housing often grouped round an extensive courtyard. There are also many small towns catering for the dense rural population and processing farm products. Most of the more important ones (Mortara, Lodi, Codogno, Crema) have attracted other industries, while Vigevano (footwear) and Pavia (74,000, sewing machines, chemicals) have become industrial centres of considerable importance. Further east, the landscape changes somewhat in the area of relatively recent improvement of the lowland around Mantua, but the same high yields are achieved. A completely new aspect of the economic life of the region is the extraction of natural gas. The main centres of extraction lie east of Lodi (see Fig. 10.3).

Between the Alps and the spring zone lies perhaps the most
vital area, economically speaking, in the whole of Italy. The high plain, between Milan and the foot of the Alps, is the principal industrial concentration in the country, and Milan, also, is the financial and business capital as well as the headquarters of many leading industrial firms.

In terms of employment and value of production, industry far overshadows agriculture throughout an area extending from places in Piedmont to the west (Biella, Borgosesia, Borgomanero, Novara) as far as Brescia in the east and widening from a few kilometres from north to south at the extremities to about 50 km immediately north of Milan. Though by no means infertile except where tongues of gravel (groane) stretch south from the Alps, giving virtually useless heaths (brughiere), the high plain cannot easily be irrigated and is not so productive as the low plain. Wheat and maize are widely grown but fodder crops are poorer in quality. The mulberry is common but today counts for little economically. In the most highly industrialised part, between the Ticino and the Adda (see Fig. 10.5), density of population is high and the old villages and cascine have invariably grown in recent decades, most villages now having a few industrial establishments. The impression is one of a semi-urban landscape interspersed with towns of some size and becoming more and more closely built-up towards the northern edge of Milan, which is expanding fast along the roads radiating outwards on the north side, but hardly at all on the south side into the low plain.

What might be called the Lombardy industrial region, excluding the extensions in Novara province and industrial centres such as Vigevano, Pavia and Crema to the south, has almost 30% of the persons engaged in manufacturing in Italy as the table on the following page (1961 data) shows. The province of Turin is shown for comparison.

Fig. 10.5 shows the most heavily industrialised part of the industrial concentration, a the main industrial centres, b the close network of communication and c the actual distribution of employment in manufacturing. The commune of Milan clearly dominates the area both for its size and its dominant position on the transport network.

At distances varying from 30 km to 80 km, but all within an hour’s journey by rail or autostrada, are six province capitals, Pavia (south of the main area), Novara (Piedmont), Varese (65,000), Como (82,000), Bergamo (114,000), and Brescia
(174,000). All but Varese have been towns of some size for many centuries and each is characterised by an old district devoid of any but small industrial establishments, and large, irregular new additions spreading particularly around the railway stations and along the roads leaving the towns, and containing both modern factories and residential areas. Varese, like Biella, is a very clean and prosperous-looking town with textile and clothing industries, spreading over the moraine hills. Como is squeezed in a hollow at the south-west tip of Lake Como and has textile industries. The old town of Bergamo overlooks the plain from a high spur from which centuries ago it began to spread into the lowland over 100 metres below. Today Bergamo is the centre of a textile district, has engineering works, and, at Dalmine (see Fig. 10.7b) some 10 km to the south-west, the great Dalmine steel tube works. Brescia originated close against the foothills but now spreads over the plain. The centre of an old armament-making district, its fortunes have declined since the Fascist period but the revival of metal smelting, metal working and engineering is now taking place. It has the factory of Officine Meccaniche, an associate of Fiat, making commercial vehicles.

Closer to Milan than these outer industrialised province capitals, two different types of industrialised settlement occur: towns such as Busto Arsizio (60,000), Legnano and Saronno, which have grown from very modest-sized settlements to industrial centres of considerable size; and villages, of which there are perhaps 200 of some importance, which have become

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<th>Employment in manufacturing in thousands</th>
<th>Percentage of Italian total</th>
<th>Employment in thousands</th>
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Fig. 10.5 The Milan area: a, Industrial towns. b, Railways. c, Employment in manufacturing in 1961. All three maps are on the same scale.
industrialised. The most heavily industrialised area extends to the Ticino in the west and the Adda in the east and lies south of a line through Cantu and Tradate (see Fig. 10.5a). Within this area many industrial sites are located along the valleys of the few small streams that emerge in the morainic hills and flow across the high plain. There is considerable specialisation in different areas: cotton textiles in the Busto Arsizio district, chemicals at Cesano Maderno and Varedo due north of Milan, and the manufacture of furniture around Desio, being examples.

Today the built-up area of Milan continues many kilometres out along the roads on the northern side and it is unrealistic to separate the commune of Milan from those lying close on the north side. Rho, Monza and Sesto San Giovanni are without question part of Greater Milan as are many smaller industrial and dormitory settlements (e.g. Cinisello Balsamo).

Milan (Mediolanum) was one of the great towns of the Roman Empire but through the continuous and intensive use of the site and the great development some centuries ago few traces are left, and the modern city inherited the narrow, often twisting streets of the medieval town together with two imposing lines of walls, now replaced by boulevards. Between about 1550 and 1850 the population and form of the town did not change greatly (see Fig. 10.6, inset map), and on the eve of unification the town was, by European standards of the time, a second-rate regional capital with no large-scale manufacturing. Unification, railway construction, early experiments in electricity technology in the vicinity (Paderno d’Adda and Vizzola Ticino), the hydro-electric power of the Alps, an outstanding position on the route system of this part of Europe, and, presumably, the tradition, enterprise and wealth of Lombardy, all contributed to its modern growth.

In the centre of Milan industries are virtually non-existent and residential buildings few; the density of population is actually diminishing in some central wards. This central district has a clearly defined financial district with the Stock Exchange and the headquarters of banks and insurance companies, some specialised shopping streets and less distinct educational, administrative and entertainment groups. Around the centre is a zone of very high density residential use, dominated by blocks of flats 8-12 storeys high and, beyond this, on all but the west side, a ring railway at a distance of
Fig. 10.6 Milan: industries and railways.

Fig. 10.7 Turin and Dalmine: a, Fiat premises in Turin. b, Dalmine.
2½–5 km from the Piazza del Duomo (see Fig. 10.6). The passenger stations and goods yards are on this ring or project from it towards the centre. All but local passenger traffic is handled at Milano Centrale, one of the largest stations in Europe. Close to the ring railway and along the lines leaving it for various destinations in Italy are most of the larger industrial establishments (some important ones are named in Fig. 10.6). Milan is above all an engineering centre, but the Pirelli works dominate the Italian rubber industry and Falck, in Sesto to the north-east, is a leading producer of special steels. On the north-west, between Milan and Rho, is the large Condor oil refinery, while on the south-east side, at San Donato Milanese, is a dazzling new settlement, Metanopoli, the research centre of the E.N.I. Group (Ente Nazionali Idrocarburi). The roads leaving Milan to the north are lined with medium-sized modern light industrial establishments; those to the south plunge at once into the rural low plain. Monza, to the north-east of Milan, had a royal residence for some time and is an attractive dormitory suburb as well as being industrialised.

10.5 TRENTO–ALTO ADIGE

In some respects a larger version of the Valle d’Aosta, this region (formerly Venezia Tridentina) has certain very distinct features. It is four times as extensive as the Valle d’Aosta and has eight times as many people. Its relatively recent inclusion in Italy (1919) and the strong regional consciousness of the Alto Adige (Bolzano province) make it, on account of discontent among the German-speaking population, virtually Italy’s last problem area. Producing a fifth of Italy’s hydropower, and having much of the remaining potential, it is a source of energy of national, not merely regional importance. The Trentino–Alto Adige extends south from the crest of the Alps to within 10–20 km of the plain and is fairly clearly marked to the west (Cavedale, Adamello) and east (highest part of the Dolomites). It coincides roughly with the higher areas of drainage of the Adige, Mincio (Garda) and Chiese rivers, but is less isolated than the Valle d’Aosta, there being roads to the west and east into adjoining sections of the Italian Alps and over the Alps northwards into Austria (Resia, Brenner (railway), Dobbiaco) as well as south to the plain. The most striking feature of the area is the roughly north–south
Isarco–Adige valley which is followed by the railway from Verona to Innsbruck and south Germany.

Rainfall is very heavy in the region and forest growth is of a high quality, pastures very productive and water for hydro-electric purposes correspondingly more abundant than in the Western Alps. As well as having a large surplus of electricity the region supplies timber and dairy produce to other parts of Italy and, thanks to the relatively wide valley of the Adige, is able to specialise in the production of apples and grapes.

A further advantage of the Trentino–Alto Adige is its special tourist attraction. As a German-speaking 'window' south of the crest of the Alps it has continued to attract tourists from Austria and especially Germany even since being cut off from the German-speaking countries. Though not so high as many other groups of mountains in the Alps, the Dolomites, on account of their massive form, towering appearance and precipitous sides, are a fascinating variation in Alpine scenery.

Bolzano (89,000) and Trento (75,000) are larger than any other towns in the Italian Alps. They owe their size to service functions rather than to the growth of manufacturing, but there are some electro-metallurgical and engineering industries around Bolzano, profiting from the abundant electricity. Merano and Riva are attractive service and tourist centres.

10.6 VENETO

Veneto (also Venezia Euganea before the war) has even more plain and less mountain (29%) than Piedmont or Lombardy but still shares a number of characteristics with these two regioni. From Lake Garda north-eastwards, the Monti Lessini and Altipiano d'Asiago are continuations of limestone areas at the southern fringe of the Dolomites, but Belluno province extends north into the high Alps, including part of the Dolomites proper. In contrast to Piedmont and Lombardy, Veneto contains a large part of the flood plain of the Po and Adige, has two small hill areas (Monti Berici and Colli Euganei) virtually isolated within the plain itself, and extends to the coast, to include most of the present delta of the Po, a number of lagoons, of which the Laguna Veneta is the largest and most famous, and marshes and lines of dunes interrupted by the porti, which give access from the lagoons to the open sea.

The province of Belluno coincides roughly with the
mountain part of the Piave basin and has the characteristics of the Alps. Though possessing several large hydro-electric power stations and having many tourist centres, including Cortina d’Ampezzo, the province is less prosperous than the neighbouring Alto Adige and the town of Belluno (31,000) much smaller than Bolzano. It has no important through route and has failed to attract large-scale industry. Pressure of population and failure to diversify its economy have caused an appreciable exodus of population in the last hundred years. The Belluno valley contains the only sizable area of cultivation.

Along the foothills of the Alps and in the high plain the economy is more diversified. Large areas of vineyards occur on the hills, while many of the foothill towns have become industrialised. Verona itself is an isolated manufacturing centre of growing importance, but Vicenza (engineering), Schio, Thiene and Valdagno (textiles) form an industrial complex worthy of Piedmont and Lombardy in the range of their products if not in size.

The plain is partly divided by the two detached hill areas and these separate the lower Adige valley, including the precariously low-lying Polesine and Valli Grandi Veronesi, areas of relatively recent reclamation, from the area of older settlement around Padua and Treviso. In Veneto the plain receives a heavier rainfall than further west, one reason for the emphasis on maize rather than wheat. Rice is also grown in a few areas and sugar beet, as in neighbouring Emilia–Romagna, in the flood plain of the Po. Fodder crops for cattle are widely grown, especially in the southern part. Around Padua, Treviso and Vicenza the landscape is characterised by small fields, rows of mulberry trees and the mixed cultivation of deciduous fruits, including the vine, and field crops; settlement is dispersed and rural population density is markedly higher than in areas with roughly comparable physical conditions in Piedmont. A considerable movement of farm workers from Veneto both to towns and to rural areas further west therefore takes place.

Verona (221,000), like Bologna on the opposite side of the plain, is a route centre of great importance and regional centre for the western part of Veneto. Further east, Vicenza (98,000) and Treviso (75,000) are province and manufacturing centres but the role of regional capital is shared in practice by Padua and Venice. Padua (198,000) is more easily reached than Venice from most places in the lowland and has emerged as an
important cultural and commercial centre, without being heavily industrialised.

Venice (336,000), in its lagoon setting, is unique among Italian towns in several respects. The place emerged as a trading centre of importance on reclaimed land in the lagoon more than 1,000 years ago. At first its supplies came entirely from outside but gradually as it enlarged its trading posts into footholds and then in some cases appreciable slices of territory, it built up a chain of possessions reaching to the Aegean and Black Seas. Later it began to annex territory on the mainland, eventually reaching north-west into the Alps and west into Lombardy. One of the great commercial, financial and cultural centres of the Renaissance, Venice stagnated after the 16th century, its old buildings remaining on the intricate system of islands and canals and fortunately preserved with little disturbance to the present. A causeway carrying a railway was completed to the town as early as 1846 and modern port works, now inadequate, were later built to revive its trade in newly unified Italy.

The modern commune of Venice is split into three main parts: the old island city with its canals, a gratifying absence of all wheeled vehicles, magnificent palaces and churches and picturesque but decrepit side streets; the fashionable Lido resort, reached only by ferry; and the great modern port (Porto Marghera) and town (Mestre) on the mainland. Porto Marghera is now one of the leading ports of Italy and recently has been able to expand more easily as an industrial area than Genoa. Chemicals, non-ferrous metals and engineering establishments make it the leading industrial concentration in Veneto. There is a large oil refinery and Montecatini has several important factories.

As an outlet for north-east Italy, Venice has revived in an impressive way and increase in employment in industry in its province in the 1950s appreciably exceeded that in the province of Genoa. The future for the old town itself is less bright, for enormous restoration of foundations as well as buildings themselves, now being seriously considered by an international body, is necessary if this unique monument is to remain intact at all for future generations.

10.7 FRIULI—VENEZIA GIULIA

The eastern extremity of North Italy consists of the large province of Udine (Friuli) and the two small provinces of
Gorizia and Trieste, the remains of Italy's much larger inter-war Venezia Giulia, which included the Julian Alps and the Peninsula of Istria. The boundary dispute resulting from the Second World War has been satisfactorily settled, but Trieste, which remained Italian, was deprived even of its immediate hinterland.

The province of Udine, basically the basin of the Tagliamento, is almost half mountain, having the usual features of the Alps: power stations, forests, a dairying industry and some tourism. Italy's principal direct link with eastern Austria, via the Valle Canale and Villach, crosses the Carnic Alps in the north-east. South of the mountains is a zone of hill country including the largest morainic deposits east of Lake Garda. Soils are poor and conditions less favourable for viticulture than in Veneto. The plain, again, is not so promising as further west, though rainfall is high enough to allow the widespread cultivation of maize. Udine (85,000) is both a service and a manufacturing centre.

The international boundary now passes through the outskirts of Gorizia (42,000), depriving it of much of the area it previously served. Trieste (273,000) is comparable in population with major regional centres of Italy such as Bari and Catania but occupies an anomalous position. It was developed as the main outlet of the Austrian (later Austro-Hungarian) Empire and was a town of considerable size a century ago. The emergence of new states in Central Europe after the First World War broke up its traditional hinterland, and its inclusion in nationally conscious Italy reoriented it westwards. But as a port and regional centre Venice is better placed than Trieste to serve all of North Italy except Friuli. Though Trieste ranks very high among Italian provinces in per capita income, its existence is precarious. Most of its trade is with Austria and it also serves south Germany and Yugoslavia. Whereas most provinces of North Italy have increased employment in industry appreciably between 1951 and 1961 the province of Trieste actually lost (a decline from 35,000 to 33,000), while Gorizia (20,000 to 23,000) only gained slightly. Even so, there is an industrial zone of some importance between Trieste itself and Monfalcone, with an oil refinery, small iron and steel works (Servoła) and Italy's second largest shipbuilding yards. In the shipyards of Cantieri Riuniti dell'Adriatico was recently built the 27,500 ton Galileo Galilei.
10.8 EMILIA-ROMAGNA

Roughly comparable in population and area with Piedmont and Veneto, this region differs in several important respects from its neighbours north of the Po. One-quarter is mountain, but the mountain area averages roughly half the altitude of the Alps; one-quarter is hill country, but this is more like the Monferrato than the foothills of the Alps. One-half is plain, but the landscape differs from that north of the Po: the characteristic poplars are few and the mulberry almost non-existent, while the river beds are dry in the summer months and there is very little irrigation. Summer is not the wettest season, though the region is far from having the marked winter maximum of the Mediterranean proper. The region, too, has had a different history from the areas north of the Po, including stronger links with Rome and the States of the Church, and also with Tuscany. On the eve of unification the eastern two-thirds belonged to Rome, the remainder to the Duchies of Modena and Parma.

The Apennines of Emilia–Romagna (Tuscan-Emilian Apennines) are highest and most extensive in the four western provinces, reaching 2,000 metres in a few places. They are a considerable obstacle to movement, and only one railway (La Spezia–Parma) crosses them, though there are several road passes. They are mainly sandstone and generally infertile. A few moderate-sized hydro-electric power stations have been built but the volume of water is too small to allow the construction of large ones. There is little good quality forest and natural pastures are poor. As the land descends northwards to the plain, merging into hill country, cultivation becomes more widespread, wheat being the chief crop except in the northern foothills, where the vine is cultivated.

South of Bologna and in Forli province the Apennines are appreciably lower (rarely over 1,200 metres), are more easily crossed (three railways and several roads) and are almost everywhere farmed. The first railway from Bologna to Florence ascended the Reno valley and then descended by difficult tunnels and curves to Pistoia. In 1934 a more direct line with easier gradients and a tunnel 18.5 km long was completed and this carries all but local traffic between Emilia and Tuscany.

The junction of hill and plain is almost a straight line, run-
ning nearly south-east from close to the Po just west of Piacenza to near Rimini on the Adriatic. To the north-east lies the plain of Emilia, bounded by the Po on the north (the province of Mantua in Lombardy actually extends south in one area) and widening from a few kilometres at Piacenza to 85 km at Ravenna.

The plain of Emilia–Romagna has the same structural features as the plain north of the Po but these are not nearly so accentuated or distinct. Along the foot of the hills is coarser material; at a distance of about 15 km is a weakly developed spring zone; the beds of the main rivers are slightly incised into the higher plain. North of the spring zone the low plain merges into the flood plain, which in Ferrara province is below the level of the Po. In the extreme east reclamation is in progress but the large Valli di Comacchio remain under water. Though not irrigated, the plain of Emilia–Romagna has sufficient rainfall for the cultivation of wheat, sugar beet and fodder crops, and vegetables, vines and deciduous fruit trees are also widely grown. Throughout the higher part of the plain there is a characteristic landscape of small fields, often subdivided by rows of tree crops, carefully tilled and giving high yields by Italian standards. Rural settlement is highly dispersed and in many places roads and settlements reflect the grid pattern of colonisation laid down by the Romans over 2,000 years ago. In the flood plain conditions are somewhat different. In the west large dairy farms on the cascina pattern familiar in Lombardy occur, while towards the delta farms and fields are large, and mechanisation widely applied. Much of Italy’s sugar beet is grown in this latter area but land reforms have been aimed against the very large estates.

The economic life of Emilia–Romagna is very much orientated towards the axis of the Via Emilia, the famous road, now closely accompanied by the railway, and from Piacenza to Bologna also by the Autostrada del Sole, running close to the foothills of the Northern Apennines. Six of the eight province capitals are on this line, each serving an area of plain and an area of hill and mountain. Research has shown that the sphere of influence of each town, as a service centre, coincides very closely with the province boundary.¹ The other two are on the plain: Ferrara near the Po and Ravenna near the coast.

Imola, Faenza and Cesena are other sizable towns on the Via Emilia. In the extreme south-east of Emilia–Romagna the coast is lined with a series of resorts frequented, unlike the Riviera, almost entirely in the summer months, their attraction being the excellent sands and the hot, dry and sunny weather of the Adriatic. Rimini (87,000) is the largest.

Though not so highly industrialised as the towns of north-west Italy, the towns of Emilia–Romagna have increased their employment in manufacturing appreciably in the 1950s and new chemicals and engineering industries have developed alongside older food-processing and light industry. Emilia–Romagna's industrial revolution is due partly at least to the rise of the natural gas industry, partly to the establishment of a large oil refinery at Ravenna (115,000) and the revival of this historic centre as a port. Ferrara (151,000) also has a large chemicals complex. Engineering is developed particularly at Bologna and Modena. Parma (141,000), Modena (139,000), both old capitals, Bologna, Ferrara and Ravenna (with Byzantine buildings) are towns of great historical interest. Piacenza (88,000) and Reggio nell'Emilia (117,000) are also large centres.

Bologna (441,000) occupies a special position in Italy. Most of the traffic between the Peninsula on the one hand and North Italy and countries north of the Alps on the other passes through the town. Close to the northern side of the old town, with its famous University, many towers and other old buildings, are the great passenger station, several marshalling yards and a complicated arrangement of lines designed to give access from each main line entering the area to every other one without interrupting the flow of traffic. Though most distinguished as a railway centre, Bologna is a well-balanced regional capital with manufacturing as well as a wide range of services.

**Suggestions for Further Reading**


Chapter II

CENTRAL ITALY

II.1 INTRODUCTION

For various reasons the *regione* of Abruzzi e Molise has been included in this chapter and not under the South, to which it traditionally belongs. Though associated for centuries with Naples, Abruzzi e Molise has much in common with neighbouring Lazio and Marche and since unification its ties with Naples have weakened and its links with Rome have grown. The southern limit of Central Italy in this chapter therefore comes opportune where the hill country leaves the coast on the Adriatic side (Gargano and the Capitanata), and where the relatively high Apennines of the central part of the Peninsula terminate (the Matese). The northern limit, already discussed in the last chapter, follows for the most part the Northern Apennines.

The Centre plus the Abruzzi e Molise covers almost a quarter of the total area of Italy (24.4%) but has a somewhat smaller share of the total population (21.6%). It cannot rival the North in resources, nor the South in suitability of climatic conditions for special crops. Its outstanding attribute is the possession of the national capital, Rome, which, with more than 2m inhabitants, has in its large commune over half of the population of Lazio.

While the North may be divided into reasonably clear-cut physical regions, Central Italy consists of a bewildering succession of mountain areas, interior basins, hill country and coastal lowlands. No section across the Peninsula from coast to coast repeats the conditions of any other, but along the Peninsula from north-west to south-east several broad physical zones may be discerned. Throughout the length of the region run the Apennines, rarely however forming a single range. In the extreme north-west they exceed 2,000 metres in places and are complicated by the high parallel Alpi Apuane. They are somewhat lower and narrower north of Florence and also in Umbria and the Marche, but towards the south of the Marche rise again and widen to form several massifs separated by
longitudinal depressions and narrow transverse valleys, and in places the landscape of the Alps is recalled; in the Gran Sasso (Corno Grande almost 3,000 metres) and the Maiella (Monte Amaro, 2,795 metres) small areas were glaciated. The main watershed, which does not necessarily pass through the highest points, swings east from a line mid-way across the peninsula between Florence and Bologna to pass much closer to the Adriatic in the Marche. In the Abruzzi it returns roughly to the centre. It thus leaves only a relatively narrow belt of hill country in the east, drained by rivers flowing direct to the coast in the Marche, but a much wider area of hill country and lowland in the west, with many longitudinal valleys, and two relatively large drainage basins, the Arno and the Tiber. These two rivers and their main tributaries pass through several valleys and basins, but, apart from the Ombrone, the other rivers reaching the Tyrrhenian between the Arno and Tiber are much shorter and more direct. In Abruzzi e Molise and southern Lazio most of the width of the Peninsula is occupied by mountains, and on both sides of the main watershed the larger rivers (Pescara, Liri, Sacco) follow longitudinal valleys in their upper courses.

The physical landscape varies from one area to another not only on account of the complexity of relief and drainage but also as a result of the varying lithology and resultant diversity of land forms. The Apennines as far south as southern Marche are formed mainly of sandstones, marls and clays, giving generally rounded crests but deeply dissected flanks. The Apennines of the Abruzzi and Lazio are largely limestones, and stand out as massive blocks with precipitous sides separated by sizable basins. On the Adriatic side is the belt of dissected hill country consisting of easily eroded Pliocene sands and clays. On the western side, the volcanic plateau extends over southern Tuscany and western Lazio. It contains many extinct volcanoes (Amiata, Monti Volsini, Colli Albani), some of them lake-filled (e.g. Bolsena), and many small rivers somewhat incised in the plateau surface. Pliocene hill country is also found in Umbria and Tuscany, especially between the Apennines and the volcanic plateau. The central part of the Peninsula contains also a large number of Plio-Pleistocene lake basins (see Fig. 11.1) drained mainly by the upper Arno and Tiber. Relics of the lakes remain in Lake Trasimeno, while in the Fucino basin and in the Arno valley below Florence
Fig. 11.1 Central Italy including Abruzzi e Molise: a, Relief and drainage. b, Towns, communications and hydro-electricity. The maps are on the same scale.
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lakes have been drained in historic times. The Fucino lake was drained by a tunnel completed in 1875 by the Duke of Torlonia. The others have long disappeared, leaving fertile, flat or gently sloping areas nearly encircled by mountains. These basins are of great importance not only agriculturally but also because they combine to form relatively easy corridors of movement along the Peninsula. The Tyrrhenian coastlands are characterised by numerous small coastal lowlands in the Maremme district (see Fig. 11.1a). Thinly populated on account of the danger of malaria, they have gradually in the last century been drained and settled. The largest area to be reclaimed was the Pontine Marshes south of Rome.

The population of Italy is distributed very unevenly in Central Italy. The Adriatic hill country forms a continuous belt of high rural density but has no towns of great size (Ancona, 100,000, is the largest). The lower Arno valley and the interior basins are also densely populated and have several sizable towns. In contrast the Tyrrhenian coastal lowlands and the lower Tiber valley area only support a low density of population, if Rome itself is excluded. In general, too, the volcanic plateau has remained sparsely populated, while the highest parts of the Apennines in the Abruzzi are virtually uninhabited.

The resources of Central Italy will be dealt with in each regione in turn but it should be appreciated that really good quality agricultural land is very limited (less than 10% is defined as plain) and even moderately good conditions for arable farming are not widely found. The volcanic plateau and much of the Apennines are of very poor quality indeed. Nor are the forests generally of good quality. Good sites for hydro-electric power stations occur only in the high Apennines of Abruzzi, Marche and Umbria, while economic minerals are virtually confined to southern Tuscany, though recently natural gas has been discovered in the Adriatic hills. Industrially, too, Central Italy is disappointing, for only Tuscany compares even with the less industrialised regioni of the North, such as Veneto and Emilia–Romagna.

Fig. 11.2 shows the principal railways, and three important routes along the Peninsula may be noted, the Tyrrhenian and interior lines converging on Rome and the Adriatic line closely following the other coast. Across the Peninsula the two busiest routes are from Rome through Terni to Ancona, following the
Fig. 11.2  a, Lower Arno valley.  b, Middle Tiber area.
course of the Roman Via Flaminia, and the Rome–Sulmona–Pescara line.

II.2 THE MARCHE

To a large extent the Marche is a continuation of Emilia–Romagna without the plain. Its mainly sandstone mountains in the interior are not very rugged and cultivation extends high up the slopes. Its Pliocene hills are reasonably fertile though inconvenient to cultivate because greatly dissected. Crossing the hill country at intervals of 10–15 km are many narrow south-west–north-east valleys of small rivers, with fertile valley floors extending to a very narrow coastal plain north-west of Ancona, but running direct to the sea further south. These conditions continue, indeed, into the Abruzzi, but here the Apennines are closer to the coast and higher.

Passing south-east from Emilia through the Marche conditions change gradually. Total precipitation diminishes and winter occurrence becomes more marked; the olive appears, though it is not so widely cultivated as at the same latitude on the other side of the Peninsula. But the heavy dependence on wheat, the widespread cultivation of the vine and a satisfactory if not flourishing dairying industry are to be found here, as in the hills of Emilia–Romagna.

The Marche is one of the most predominantly rural regioni of Italy. Many of its small, pleasant towns were centres of some distinction centuries ago (Urbino, Macerata, Ascoli Piceno). The arrangement of relief is such that only along the coast is movement from north-west to south-east easy, and both road and railway from Bologna towards Apulia therefore run close to this. Only one railway, the trans-peninsular route from Rome through Terni to Ancona, crosses the Apennines of the Marche. Ancona, undoubtedly the regional capital of the Marche, is smaller and less influential than might be expected. Its port handles a modest volume of general cargo, while Falconara receives crude oil and has a moderate-sized refinery and some shipbuilding. Though employment in industry has increased faster in the Marche in the 1950s than in most parts of Italy, the total is still small and there are few large factories, but Fabriano, making paper, is a manufacturing centre of some importance. The presence astride the boundary of Emilia–Romagna and the Marche of the small Republic of San Marino may be noted. This commune-sized independent
state, perched on a precipitous hillside, depends on agriculture, tourists and the sale of stamps.

II.3 TUSCANY

Like the Marche, Tuscany is up to a point a transition between the North and the Peninsula, though in a more complicated way. The fertile basins and plains of the lower Arno are reminiscent of the North Italian Lowland, while the olive trees and hill-top towns to the south are characteristic of the Peninsula. Tuscany is also intermediate among Italian regioni in degree of industrialisation and in standard of living. Its location is intermediate too and it is not surprising that before Rome was absorbed by the newly formed Italy, the national capital was transferred from Turin to Florence. Many functions of national interest or importance (e.g. international football matches) are still held there. The Tuscan dialect of Italian, too, is the one closest to modern Italian and intermediate between the extremes found in the North and South of the country.

The Apennines in Tuscany are about 180 km long and 30 km wide, forming a considerable barrier along the northern side of the regione. They include several longitudinal valleys, the Lunigiana, Garfagnana, Mugello and Crescentino, which, in contrast to the surrounding mountains with their poor forests and pastures, are largely cultivated. The Apennines overlook the series of depressions linked by the Arno as it flows northwest from Arezzo to Florence then west to the sea (see Fig. II.1a). The Arno valley contains some very fertile land, and wheat, maize, and fodder crops for cattle give reasonable yields. South of the Arno the hill country with its vines, olive groves and wheat farms rises to the less fertile Colline Metallifere and Monte Amiata areas of Siena and Grosseto provinces. Much of the southern part of Tuscany is poor forest or grazing land but improvements are being made both in the hill country and along the coastal lowlands. Though mining employs only about 10,000 persons in the two provinces and is declining, this is one of the major activities as it is also in the rugged island of Elba.

Tuscany has only a very limited hydro-electric potential, but it has been able to benefit from the exceptional conditions in the vicinity of Volterra (Pisa province) to generate electricity from geothermal sources (soffioni boraciferi) at the power stations.
of Larderello. Otherwise Tuscany is lacking in sources of energy and even before unification coal was imported through Leghorn. After the Second World War a large oil refinery was built there, and recently a gas pipeline has been completed across the Apennines between Bologna and Florence to bring gas from Emilia.

Though Tuscany is not so highly industrialised as north-west Italy (there are fewer workers in manufacturing than in Turin province alone), every important branch is represented to some extent. Most of the metallurgical workers are in Piombino on the coast, in one of Italy’s largest integrated iron and steel works. Using foreign coal and a combination of Elba and foreign iron ore, it produces currently about 10% of Italy’s steel. Portoferroio on Elba also had blast furnaces but these are now closed. The mining of other ores (mercury, lead, zinc) and of non-metallic minerals, and the processing of these, are widespread in Tuscany. In addition to the mines of Siena and Grosseto, the Massa–Carrara area has depended heavily on its stone quarries. Now chemicals and metallurgical industries have been introduced. The manufacture of textiles and clothing is important in the towns along the northern rim of the lower Arno, Lucca (86,000), Pistoia (82,000) and Prato (100,000), as well as in Florence. Pontedera near Pisa has the Piaggio engineering works and furniture making is of more than local importance in this district as well, while there is a large chemicals plant at Rosignano, near Leghorn. Arezzo, Siena and Grosseto are primarily service centres, while Viareggio is one of Italy’s largest coastal resorts and Montecatini Terme a famous spa town. Pisa (91,000), Lucca, Siena (62,000) and Arezzo (74,000) are all of great interest historically but Florence, like Venice and Rome, is a city of exceptional cultural and historical importance.

With 438,000 inhabitants in 1961 Florence has recently been pushed into eighth place among Italian towns by Bologna (441,000) but is a regional centre of considerable importance and lies on the main axis of Italian economic life. Though it is a busy industrial centre (textiles, clothing, engineering) and the commercial centre for a large area, Florence is outstanding in Italian life as a cultural centre. It inherits a rich collection of art treasures, some magnificent buildings and a university of international fame. Despite its size the city has managed to grow unobtrusively within its beautiful setting of hills, to remain perhaps the most satisfying of all large Italian towns.
II.4 UMBRIA

One of the smaller regioni of Italy, Umbria is only skirted by the main railway from Florence to Rome. It resembles Tuscany to the west more than the Marche across the Apennines. It is drained almost entirely by the south-flowing Tiber and its tributaries. The Apennines form a barrier on the east, crossed by the railway to Ancona, but the rest of the regione consists of hill country and small but fertile valleys. A wide range of field crops is found in the lower parts: wheat, maize, fodder crops, tobacco, vegetables and sugar beet, while the hill slopes are used for olives and vines. Each valley has its own small but attractive service centre: Città di Castello and Umbertide in the upper Tiber, Foligno, Todi and Orvieto further south. Assisi is a small hillside town of great religious importance. Though there are some hydro-electric stations in the south of Umbria, raw materials for manufacturing are few and there is only a modest potential market in the region. Manufacturing on any scale is confined to the two province capitals, Perugia (110,000), a town of great interest, on a hilltop some 200 metres above the Tiber valley, and Terni (94,000) with its neighbour Narni. For no obvious reason Perugia has become a centre of national importance for the manufacture of confectionery. Terni has a steel works established after unification for security reasons in the interior of the Peninsula without however a raw material base. The Terni area also has a chemicals industry.

II.5 LAZIO

For the most part Lazio is a poor regione both in the quality of its land and in the lack of minerals, yet statistically it appears to be one of the most prosperous in Italy due to the presence of the national capital, which contains half of the total population and whose existence and prosperity are to be explained entirely in a national context. Although in recent decades Rome has been making a considerable impact on the rural areas in its vicinity, Lazio and Rome must be considered separately.

Very broadly, Lazio consists of a predominantly mountain area in the east, a predominantly hill area in the north-west, and an almost continuous lowland of varying width along the coast in the south-east. The mountains are mainly limestone and their slopes infertile. Cultivated land and population are confined largely to the valley floors and lower slopes, as in the
small Rieti basin and in the wider Sacco-Liri valley (the Ciociaria) running south-east from Rome between the main area of the Apennines and some detached hills and mountains. Wheat, the vine and the olive account for much of the value of farm production but the presence of extensive high and otherwise useless mountain areas allows the grazing of sheep, a slowly declining but still characteristic branch of farming in the Central and Southern Apennines. There are, also, some hydro-electric power stations in the area, but little use is made of the electricity locally. The province of Rieti has virtually no large-scale industry, while Frosinone province has little except a declining paper-manufacturing industry employing now a few thousands persons.

Economically the hill country of the volcanic plateau west of the Tiber is no more inspiring, and in view of the generally poor quality of the soil a surprisingly high proportion is actually cultivated. Poor quality forest is also widespread. Viterbo (50,000) remains a quiet provincial centre and Civitavecchia, in spite of being the principal port for one of Europe's great capitals and the main base for trade with Sardinia, is of very limited size. Tarquinia nearby has the only large-scale industry.

Conditions are superior in the province of Latina to the south of Rome thanks to the draining of the Pontine Marshes. The Agro Pontino is one of the most productive areas in the Peninsula. The express line Rome--Naples passes through it and the construction of a nuclear power station near Latina, though intended for the region as a whole, is one of several examples of advances along the mid-Tyrrhenian coast. But the recently drained and settled plains of Latina and the Bonifica di Maccarese with their regular layout of roads and buildings are clearly close enough to Rome to have been consciously developed to provide a food surplus for the growing capital. In a similar way the presence and rapid growth of Rome explains the creation of a whole string of new settlements along the coast on either side of the mouth of the Tiber (see Fig. 11.3). Some are outer suburbs for the more prosperous citizens of Rome (e.g. Fregene), others popular resorts for day trippers (Lido di Ostia), while Fiumicino is a small port. The construction of suburban railways has also revived places on the volcanic hills to north and south (Bracciano, Castel Gandolfo, the summer residence of the Pope, Albano Laziale).
Fig. 11.3 Rome.
The commune of Rome is exceptional in Italy for its size (1,500 sq km). It occupies 28% of the area of the relatively large province of Rome and is larger than certain whole Italian provinces. Nevertheless, 1951 figures show that then almost all the population (1,576,000 out of 1,652,000) lived in the town itself; the Lido di Ostia (14,000) was the only town of size outside Rome but in the commune. The Campagna di Roma, in which Rome is set, is an undulating lowland mainly of infertile volcanic material, which has never been productive agriculturally.

The distinguished history of Rome is well known and space does not allow this to be traced up to the present day. In the early 19th century Rome had a mere 150,000 inhabitants, several times less than at the peak of its career in the Roman Empire, and no more than it had in the Renaissance period. It was the capital of the States of the Church, a third-rate, backward power in Europe of that time. More important, the Vatican City was the headquarters of the Roman Catholic Church. Difficult to reach from most parts of Europe, Rome nevertheless attracted large numbers of visitors even before the completion of the rail link to the north, both for its religious attraction and its historical interest. A century ago it therefore already had its three main present-day functions: administrative, religious and tourist. Contemporary accounts described it, however, as a dirty town with decrepit buildings among vast ruins, something of a misfit among the remains of Ancient Rome. Long before the Fascists transformed it into one of the most attractive cities in Europe it had begun its impressive emergence as a rapidly growing modern capital city.

A hundred years ago the population of Rome was under 200,000. Around 1910 it passed 500,000, in 1933 1m and in 1960 2m. In 1870, when it became the capital of Italy it had well under 1% of the total population of the country; now it has over 4%. Even so it has not achieved the dominant position that Greater Paris (17%) and Greater London (15%) have, nor even of Madrid (7%) in Spain. Paris and London are of course multi-functional capitals, commercial, financial and industrial as well as administrative, while Rome, though being more than the national capital, has virtually no large-scale industry at all. It may partly have been national policy to preserve it as a city free from the unpleasantness of industry, but apart from being a considerable market itself, Rome has
had little to attract industrialists: no raw materials in the area, no energy until the development of hydro-electric power in the Central Apennines in the inter-war period, and no skilled labour on the spot. 1961 figures show an increase in employment in industry in the province of Rome (166,000 in 1951 to 216,000) but 40% of the 1961 total was in the building industry and services, and only 136,000 in manufacturing, most of it in the manufacture of clothing and wood, the maintenance of machines and the production of building materials. Textiles, metallurgical and large-scale engineering are virtually non-existent and only the chemicals industry has made some progress.

As an administrative centre the functions of Rome fall into four main classes: locally it is a province capital; as the national capital it is the seat of government and has the ministries and headquarters of nationalised industries as well as foreign embassies; as a centre of some international importance it has certain bodies such as the Food and Agriculture Organisation (F.A.O.); and as the ‘capital’ of the Roman Catholic religion it contains the Holy See (Vatican City), a sovereign territory with a permanent population of under 1,000 and an area of only 44 hectares near the centre of the built-up area. The Vatican consists of the church of St Peter’s and various associated buildings.

On account of the large extent of the preserved ruins in the central part of the city, the urban morphology of Rome is unusual (see Fig. 11.3). The 19th-century town was only about 1-5 km across and stood on the left bank (east side) of the Tiber in a mostly flat area. Across the Tiber was the Vatican, while on the same side as the old town itself were the hills and ruins of ancient Rome. The 19th-century nucleus is preserved almost intact at the present day but its narrow streets and old buildings are too congested to serve satisfactorily now and the main administrative buildings lie on the hills to the east (Quirinale and others). To the north are parks and villas. The main passenger station (Roma Termini) lies due east of the old town and the Via Nazionale, connecting the two, is Rome’s busiest shopping street. To the south-east of the old town are most of the ruins, including the Roman Forum and the Colosseum.

The districts so far described together form the Rioni (area 15.7 sq km) which might be called the central business district
of Rome but which has a considerable though diminishing population (1951, 424,000; 1959, 335,000). Beyond the Rioni lie the Quartieri (101.6 sq km) with an increasing population and almost two-thirds of the total commune population (1951, 968,000; 1959, 1,164,000). These, like the Suburbi beyond, are predominantly residential, but population is distributed very unevenly over these districts due to the tendency to build at irregular intervals clusters of tall blocks of flats (8-12 storeys) leaving intervening land only slightly developed or even unused. Though an interesting and attractive city in many ways, Rome is not satisfactory for several reasons. It has grown very rapidly and with little serious planning; its amenities are poor for a town of its size; its streets are inadequate for the large number of motor vehicles in circulation; and the construction of dwellings has not kept pace with the growth of population. The construction of an underground railway and of an outer ring road are attempts to improve the situation. Perhaps the most serious question is whether industry should be encouraged to develop in the Rome area.

II.6 ABRUZZI E MOLISE

Described earlier as traditionally part of the South but now orientated towards the Centre, Abruzzi e Molise is in some ways a transition area between the two, for economically it is poorer than the northern part of the Peninsula. The high limestone mountains of the interior form a large area in which arable farming is impossible; only certain basins are intensively cultivated: the Conca del Fucino, the valley of L’Aquila and the Sulmona basin. The hydro-electric power, mountain resorts, forests and natural pastures are reminiscent of the Alpine economy and the electrified but single-track trans-peninsula railway picking its way through deep valleys between Rome and Pescara has saved the area from complete isolation. L’Aquila (56,000) is the main service centre. Between the Apennines and the Adriatic the land drops through a narrow zone of hill country to the smooth, hill-backed coast. Though the hill country here is deeply dissected the land is nearly all cultivated, with emphasis on wheat growing. As in the Marche population is largely found in scattered farms and small villages. Market towns are few (Teramo, Chieti) and only in the lower Pescara valley are there a few moderate-sized factories; Pescara itself (87,000) has
some industries and is a small port handling mainly coastal traffic.

In the south the Molise (capital Campobasso, 34,000) is one of the most deeply rural parts of Italy. It is an area of low mountain and hill country, mainly rolling, but in places very broken, not generally fertile but with more than two-thirds of the surface under field crops, mainly wheat.

SUGGESTIONS FOR FURTHER READING


G. J. Fuller: The Island of Elba, Geographical Field Group, 1958

Chapter 12

SOUTH ITALY

12.1 INTRODUCTION

Without Abruzzi e Molise, discussed in the last chapter, South Italy forms a reasonably distinct major region. The hill country of the Abruzzi coastlands is replaced by the Capitanata plain, while south and east of the Matese the Apennines are appreciably lower and narrower than further north. Elsewhere the sea forms the limit of the South, but the close cultural and economic association of southern Calabria with Sicily should not be overlooked.

As a region the South has several distinctive features. For centuries before unification it formed a single political unit, tributary to Naples, the capital, which, as much for its role as a political and cultural centre, as for the fertility of the soil of its vicinity, was one of the largest towns in Europe in the last century. Now the South is the poorest part of Italy, the interior areas of the Peninsula from the Abruzzi and Lazio south having the lowest indices of per capita income in the whole country.

With 19% of the total area of Italy but 22% of its population the average density of population is higher than in the Centre, yet industries are even less developed and there is no equivalent of Rome to form a large concentration of purchasing power in any one area. The share of Italian hydro-electric capacity and potential is very small, there is very little mining, and large-scale modern manufacturing is confined to a few places. Agriculture is hindered by generally poor soils, steep slopes and dry summer conditions, and really productive land is strictly limited. As in the Centre there is a bewildering complex of relief forms, and population, too, is spread very unevenly, much of it being in two main concentrations, the Naples area and the eastern part of Apulia.

As they pass into the South the Apennines swing across the Peninsula towards the Tyrrhenian side, squeezing the lowlands of Campania against the coast and leaving a widening area of hill country and plain on the Apulian side. As further north,
limestones and sandstones are widespread as far south as the Crati valley in Calabria but to the south of this there appear a number of crystalline massifs. Though everywhere an obstacle to movement, the Apennines, whether limestones or crystalline, nowhere form a continuous range. They are made up, rather, of a number of distinct mountain areas separated by valleys and basins (e.g. Vallo di Diano) which are rarely so large or so fertile, however, as those in the Centre. South of the Abruzzi the Apennines rarely exceed 2,000 metres and the general level is 1,000–1,500 metres, though many areas approach 2,000 metres (Monte Volturino 1,836, Sila 1,929, Aspromonte, 1,956) and occasional peaks even exceed it (Pollino 2,271). South of Naples, the mountains approach the coast in the Monte Lattari, in places over 1,000, the Cilento and along the Calabrian coast (Catena Costiera), and from the plain of the Sele as far as the tip of Calabria, Italy has a second Riviera, in many respects as attractive as Liguria, but still too far to reach easily from the rest of Europe, and at present completely unsophisticated.

In the north-east the Gargano Peninsula forms a small limestone mountain area separate and distinct structurally from the Apennines. Between Gargano and the Apennines is the Capitanata (or Tavoliere), a lowland formed of Quaternary deposits. Further south a belt of broken Tertiary hill country of varying width flanks the mountain blocks of the Apennines almost throughout their length from the Abruzzi through Basilicata and along the Ionian side of Calabria. There is very little flat or gently sloping land in Basilicata or Calabria at all, and this is some of the most difficult country in Italy, with high, steep-sided ridges separating the valleys of rivers that become torrents in the rainy period and dry up completely in summer; the conditions of the Adriatic hill country of the Marche are reproduced on a more massive scale.

In Apulia south-east of the Ofanto a completely different landscape occurs, the limestone uplands of the Murge, above 500 metres in places in the province of Bari but lower and less continuous in the tip of Apulia. The main Murge descends to the Adriatic coast in a series of gentle steps, leaving here no coast plain; on the interior side it overlooks the basin of the Bradano. The Murge Tarentine and Salentine are smaller upland areas of limestone flanked by lowlands.

On the whole, relief is unfavourable for cultivation and
communications, and there is the added drawback of the long dry summer. Mean annual precipitation is considerable in the mountains—over 1,000 mm (about 40 inches) in many exposed places, but below 500 mm (about 20 inches) in almost all the interior valleys and in the lowlands of Apulia. From June to September very little falls at all, anywhere, and strong evaporation greatly reduces its usefulness, while the heavy downpours that occur in the cooler months cause serious soil erosion, and badlands are frequent.

By western European standards yields of field crops are extremely low in the South and the pressure of population on agricultural land has been desperate for a long time now. Emigration overseas, movement to urban centres such as Naples and Bari, and resettlement in lands especially along the coasts, underused for reasons of malaria or land tenure, have relieved the pressure somewhat, but substantial improvements will be costly and ultimately it seems likely that some areas would serve better if reforested. At the moment the only prospects of immediate improvement in the economy of the South are related to the planned industrialisation of certain areas and the discovery of natural gas in a number of places, but these only directly affect a small part of the total population.

Considering the difficult nature of relief in much of the South the system of main roads is better than might be expected, though road distance often greatly exceeds direct distance on account of bends. Railways, on the other hand, have definitely been inadequate, most being single track with steam traction and having steep gradients and sharp curves to overcome. Several of the railways in Basilicata and Calabria are narrow gauge. Two double-track lines run from Rome to Naples, the coastal one (the _direttissima_) completed in 1904 being the more modern and faster of the two. The line from Naples to Reggio Calabria was extremely difficult to build but is being improved and given double track in view of its importance to Calabria and Sicily. Improvements are also being made on the Adriatic line from the Abruzzi to Bari and Lecce. Two main lines cross the Apennines, Caserta-Benevento-Foggia, carrying traffic from Rome into Apulia but by-passing Naples, and Naples-Salerno-Potenza-Taranto. The system of main lines is completed by the Ionian coast line from Reggio Calabria to Taranto.
12.2 APULIA

Apulia differs from the rest of Peninsular Italy in a number of respects. It is almost by-passed by the Apennines and consists mainly of low limestone plateaux and gently undulating plains. There is little surface drainage, and the ambitious Acquedotto Pugliese (see Fig. 12.1, inset map), built during 1906–39, has to bring water for domestic and industrial purposes from the Apennines. For the most part the population is concentrated in large nucleated urban-like settlements,
whether engaged in agriculture or in other activities. In Apulia itself there is a marked contrast between Foggia province and the four provinces east of the Ofanto river.

In the province of Foggia the extensive, treeless plain of the Capitanata, actually sloping gently south-east, separates a small area of the Apennines in the interior from the limestone Gargano massif, which projects with its steep sides into the Adriatic; both are poor areas devoted mainly to grazing. The Capitanata was once one of the great areas of winter pasture used by herds of sheep from the high Central Apennines of Abruzzi. Transhumance is still practised and the sheep roads are still recognisable but the expansion of arable farming (60% of the total area is under field crops, 16% under (permanent pastures, with wheat a near monoculture) has changed the economy of the area considerably (see Fig. 12.2). Much of the population is concentrated in a few very large agricultural settlements, San Severo (53,000), Cerignola (54,000) and Lucera being the largest apart from Foggia (119,000) the province capital, which is a railway junction with a few industries but largely a service centre. Mining in the province is confined to the bauxite in Gargano, shipped to Venice from Manfredonia, while another mineral obtained is salt in the saltpans of Margherita di Savoia.

In the rest of Apulia there is a marked contrast on the Murge between the higher areas in which soil is very thin or virtually absent and only poor winter pastures or useless garrigue occur, and areas in which a layer of terra rossa covers the limestone. The terra rossa soils in Bari and the fertile plains of Taranto, Brindisi and Lecce support a highly specialised agriculture and a dense agricultural population. Just over half (51%) of the total area of the four provinces is under tree crops and just under one-third (33%) under field crops. Wheat and oats are grown in limited quantities but the emphasis on the vine and the olive is explained by the combination of generally porous soils and underlying limestone, very low summer rainfall and very high summer temperatures. Vineyards produce both table grapes and wine grapes and there is a large surplus of these, as of olive oil. High quality tobacco is grown in Salentine Peninsula, where conditions are not unlike those in nearby Greece. Other crops produced include vegetables, especially tomatoes, and almonds. Small processing industries occur widely.
Fig. 12.2 The South excluding Abruzzi e Molise. Land use, towns and railways. The maps are on the same scale.
The agricultural population of the four provinces tends to be in large settlements, especially in and around Bari, but is somewhat more dispersed in the Salentine Peninsula. West of Bari two rows of large nucleated settlements occur (see Fig. 12.3), one along the coast, the other a little inland. To the south-east of Bari the landscape is characterised by many buildings scattered among the vineyards and used by farm workers only at certain seasons, especially during the harvest, when the vines need much attention. The Alberobello district has some of the strangest dwellings in Italy, the trulli, or bee-hive-like houses with conical roofs to store water. In Lecce province the whitewashed box-like village dwellings with flat roofs are very reminiscent of houses in North Africa. The lack of water is underlined by the presence on many railway sidings of tanker wagons for carrying drinking water in an emergency.

Apulia has no hydro-electricity and, so far, no discoveries of natural gas. Even in the interwar period industry was restricted almost entirely to food processing, though Bari was developed as a commercial centre to serve Italian colonies in Africa,
and Taranto was Italy’s main naval base in the South. As a result of the Second World War, both towns were left stranded and until the early 1960’s the only major effort to diversify the economy was the building of an oil refinery at Bari. Bari, with 311,000 inhabitants, is the regional centre of Apulia. It has grown faster than most other Italian towns of comparable size but has failed to attract more than a few large industries. As a port, too, it is disappointing, for some 90% of its traffic is in oil and oil products. The clean well-planned modern town contrasts with the small hill area overlooking the original harbour and occupied by the winding streets of the old town. Taranto (192,000) is fortunate in having been chosen as the location of one of the European Coal and Steel Community’s large integrated iron and steel works. There is of course no iron ore or coking coal in this part of Italy (but plenty of limestone) and the iron ore comes hundreds of miles from North Africa, the coking coal thousands of miles from the U.S.A., or from the Ruhr. In 1963 an agreement was reached to build a large cement works near Taranto. More important still, the area has been chosen as an experimental industrial development ‘pole’ or centre. Industrial expansion is taking place also at Brindisi, chosen by the Montecatini group as the site for a large oil refinery to supply the raw materials for the manufacture of plastics, and for a chemicals plant making fertilisers and other products. Neither establishment will employ more than a few thousand people, but other industries should be attracted to the area to use their products. In contrast to Brindisi and Taranto, Lecce remains a quiet but very attractive province capital, highly individual with its fine Baroque buildings.

12.3 CAMPIANIA

Thanks to the exceptional fertility of the Naples area and the presence of Italy’s largest city south of Rome, Campania has a far higher density of population than the other regioni of the South: 350 persons per sq km compared with only 176 in Apulia, 136 in Calabria and 65 in Basilicata. This is due entirely to the great concentration in the small province of Naples of over half the population of Campania, and large areas in the Apennines are virtually unproductive and uninhabited. No less than 35% of Campania is classified as mountain, 51% hill country and only 14% as plain.

The Neapolitan Apennines consist of a number of separate
CAMPANIA

mountain massifs, mainly limestone, with some sizable interior valleys, the Volturino immediately south of the Matese and the Calore containing the main areas of arable land in the provinces of Benevento and Avellino, in the Sannio and Irpinia districts. Further south the tributaries of the Sele drain smaller, higher interior valleys. South-east of Naples the high Monti Picentini and the projecting Monti Lattari (Sorrento Peninsula) tend to isolate the province of Salerno from the rest of Campania. In the extreme south the edges of the rugged Cilento mountain area extend to the coast.

Although the interior valleys of Campania support a dense agricultural population the most fertile areas of all are the coastal lowlands of Caserta, Naples and Salerno. These are of two types: the extremely fertile soils formed of volcanic material on the gently undulating lowlands around Vesuvius and behind the Campi Flegrei, and the flat and previously ill-drained and virtually uninhabited alluvial coast plains of the Volturino and Sele (Piana del Sele). To this day there is a marked contrast between the densely populated lowlands around Aversa and Caserta and the sparsely settled Bonifica di Volturino. In the immediately vicinity of Naples and Salerno (see Fig. 12.4) there is a great variety of relief types: the still active cone of Vesuvius, 1,270 metres in height, the lower volcanic hills of the Campi Flegrei, also with continuing evidence of volcanic activity, the limestone Sorrento Peninsula with its precipitous southern face, and both volcanic and alluvial lowlands, as well as several islands (Ischia, Capri, Procida). These combine to form a wonderfully complex and picturesque landscape.

Though on the whole more rugged than Apulia east of the Ofanto, Campania receives considerably more rain and this seems the principal reason why the emphasis on field crops is greater (50% of the total area) and the cultivation of tree crops much more limited (10%). Basically there are two main types of land use in Campania, the cereal cultivation of the interior valleys, with poor sheep pastures and forests on the surrounding mountains, and the enormous variety of crops grown on the coastal lowlands and adjoining hill slopes. In both areas livestock farming is overshadowed by crop farming.

On the lowlands and hills between Caserta and Salerno is one of the most densely populated predominantly rural areas in Europe. Large villages and many scattered smaller nuclei
and individual dwellings give the appearance of a landscape halfway between rural and urban. Tiny fields, intensively cultivated, and rows of trees, give an impression of fertility rarely seen in Peninsular Italy. The basis of agriculture is the cultivation of a wide range of vegetables and fruits, and a surplus is obtained for sale in markets to the north, not only in Italy but throughout West Europe. Campania is the leading producing regione of potatoes, certain types of beans, cauliflowers and tobacco, apricots, cherries, hazel-nuts and walnuts, and also grows most other types of vegetable and fruit found in Italy.

Although lowland Campania is extremely fertile and is intensively cultivated, the population of the area, like that in the interior valleys, seems excessive on account of the lack of other activities. The commune of Naples has 1,170,000 inhabitants, but if the continuous built-up area along the shores of the Gulf of Naples and in the lowland behind is added, then Greater Naples has about 2 million. In view of the lack of sources of energy and economic minerals it is not surprising that food processing employs more persons than any other branch of industry. This is followed by clothing, service engineering, the manufacture of wood and the working of non-metallic minerals, all industries that tend to be in small establishments. Large-scale industry is confined almost entirely to the Naples area. Some 11,000 persons are employed in the metallurgical industry, most of them in the Bagnoli iron and steel works; engineering is associated mainly with the port and shipbuilding; and a few thousand persons are employed in textile and chemical factories, while one of Italy's largest oil refineries is situated on the eastern side of the town. Only in the late 1950s did the outlook for industry in the Naples area improve with the prospect of expansion of the Bagnoli iron and steel works and the opening, if grudgingly in some cases, of factories by large North Italian firms, for example Olivetti (calculating machines) and Alfa-Romeo (motor vehicles).

Greater Naples has much more of a flavour of the Peninsula and islands than Rome does. Like all the larger towns of the South and Sicily it has some fine avenues and imposing buildings, but is suffocated by its massive blocks of tenements with slum or near slum conditions, and by its high rate of unemployment and underemployment due to its having grown larger than its functions as a regional centre require. It was partly
deprived of its role as administrative and cultural centre of the South by the rise of Rome after unification. Indeed, some of the flow of migration from rural areas has been diverted from Naples to the new capital, but even so Naples has also continued to grow, without being able to develop industry to absorb the growing potential labour force.

The central area of Naples lies on the eastern side of the Campi Flegrei immediately behind the port area (see Fig. 12.4), but the built-up area spreads for more than 50 km from Pozzuoli through Naples itself and the partly industrialised towns of Torre del Greco, Torre Annunziata and Castellamare di Stabia, to Sorrento. These suburbs of Naples and the densely populated area between Naples and Caserta are served by tramways and electrified suburban railways. Naples itself; Vesuvius, the Sorrento Peninsula and the islands of Capri and Ischia form the most frequented tourist area in Italy south of Rome.

Benevento (55,000), Avellino (42,000) and Caserta (51,000), the latter with a grandiose 18th-century palace and park of the Bourbon ruling family of the Kingdom of the Two Sicilies, are mainly service centres. Salerno (118,000) on the other hand is in some respects a small version of Naples, being a cultural centre as well as a port, and having some large-scale industry. Some of the smaller manufacturing centres in the area are also shown in Fig. 12.4.

12.4 BASILICATA

Basilicata (formerly Lucania) is probably the least known of all the regioni of Italy both to Italians themselves and to foreigners. Exceeding in population only the Valle d’Aosta, it consists of two contrasting provinces, Potenza and Matera. Almost two-thirds of the area of Potenza is classified as mountain and the rest is hill country. Matera on the other hand is mostly hill country but also has some plain.

The Lucanian Apennines of Potenza consist of large areas of limestone, much over 1,000 metres, and deep, narrow intervening valleys. Rainfall is high but its effectiveness is limited. Snow lies for a considerable period in this bleak, rugged land, and wolves still frequent the more remote parts, descending to attack herds of sheep when severe winter conditions occur. Today there is a heavy dependence on the cultivation of wheat, for the sheep pastures and forests, though extensive, are very
poor. Villages are isolated, industry virtually non-existent and urban amenities confined largely to Potenza (43,000), the second highest province capital in Italy, 823 metres above sea level. As might be expected, the province comes out as the poorest in the whole of Italy in terms of per capita income.

For various reasons, Matera province is somewhat better off than Potenza. It is lower, less rugged, though still very broken, and the pressure of population on cultivable land is not so great, thanks to the presence of a considerable area of coastal lowland maintained until land reform largely as pasture. The discovery of natural gas at Ferrandina has raised hopes for economic improvements in the province, perhaps in vain, for it is mostly to be piped to Bari and Monopoli on the Adriatic coast, although a chemicals plant is under construction at Pisticci. Matera (38,000), the province capital, is of interest for its large number of cave dwellings, houses excavated in the loose sandy material of the steep sides of a valley, Il Sasso. At Stigliano, near the boundary of Matera and Potenza, the Italian writer Carlo Levi was exiled by the Fascists in the late 1930s and his wonderful description of life in this remote hill-top village in *Christ Stopped at Eboli* gives an excellent idea of conditions in the less accessible parts of the South.

12.5 CALABRIA

Of all the *regioni* of Italia, Calabria is perhaps the most unwieldy of all. It is a peninsula some 250 km from north to south but from 30–90 km in width. Over 40% of the total area is classed as mountain, a fact that would not be encouraging anywhere but which, in view of the proximity everywhere to the sea, and of the height of the mountains, is devastating.

In the north, the Pollino is the southernmost limestone block of the Apennines, and the rest of the mountains of Calabria consist of great crystalline massifs with granite centres and with sedimentary rocks, mainly Tertiary sandstone, clinging precariously to the sides, and small coastal plains of Quaternary or alluvial material at their foot. The frequent occurrence of earthquakes is evidence of the instability of the area and it should be remembered that the steep sides of the massifs continue at least several hundred metres below sea level. The mountains of Calabria have a heavy rainfall and their sides are dissected by dozens of short rivers, which become torrents in the winter months. Only the Crati, flowing south–north
between the Sila and the Catena Costiera, forms a large valley and does not flow directly to the sea. The more extensive mountain areas, especially the Sila, form plateaux with not unduly rugged surfaces, and, thanks to the construction of reservoirs, serve as the gathering ground for several sizable hydro-electric stations.

Under the conditions described cultivation is understandably very difficult and movement across the peninsula and even along the Tyrrhenian coast is hindered by steep slopes. Even so, thanks to the heavier rail traffic along the west coast, this side of the peninsula is in closer touch with the rest of Italy than is the Ionian coast.

In spite of the difficult conditions, 40% of the area of Calabria is under field crops, and 17% under tree crops. Forests (26%) cover much of the remaining land and these are of superior quality to most in Peninsular Italy. Natural pastures (11% of total area) are more restricted and sheep raising is less important than in the rest of the South. Little over a quarter of the land under field crops is occupied by wheat, a considerably lower proportion than elsewhere in the South and Sicily, and a wide variety of other crops are grown in response to the greatly varied physical conditions. Tree crops gain prominence in the south, the olive, the vine and citrus fruits all being represented. The Piana di Gioia is one of the most fertile areas in Calabria, and grows mainly oranges.

Large-scale industry is almost non-existent in Calabria. Even small workshops are few in proportion to population. There are no oil refineries, and the ports carry only coastal traffic. Crotone has a moderately large chemicals complex employing nearly 3,000 people, and Praia a Mare in the extreme north-west a sizable textile mill, but these are exceptional. The three province capitals are entirely service centres. Cosenza (78,000) serves the Crati valley and Sila but has access to the Tyrrhenian coast only by a difficult cable railway and tunnel. Catanzaro (73,000), on a high ridge-top site, serves the lowlands and hill country of central Calabria. Reggio Calabria (150,000) seems larger than its functions would justify. It has no industries, is of slight importance as a tourist centre, and is not even the ferry port for Messina and Sicily, for this is the function of Villa San Giovanni to the north. Other towns in Calabria are small and of local importance.
SUGGESTIONS FOR FURTHER READING


Chapter 13

THE ISLANDS

Sicily and Sardinia are roughly comparable in area and also share certain problems related to their insular character. On the whole, however, one is struck by the contrasts rather than by the similarities. In the first place, Sicily is separated from the mainland (il continente to Sicilians) by the narrow Strait of Messina. This is crossed by a frequent ferry service carrying both goods and passenger trains and synchronised with train services in Calabria; through sleeping coaches run from many distant towns on the mainland to Palermo and Catania. Electricity is also now carried across the Strait from Calabria. Sardinia’s link with the mainland is altogether more tenuous. Secondly, Sicily has $3\frac{1}{2}$ times more people than Sardinia. Thirdly, the agriculture of Sicily is more diversified, with an important production of citrus fruits, wine and other Mediterranean crops for sale outside the island; it also has a rapidly expanding oil industry, in contrast to the declining coal industry of Sardinia.

In many respects Sicily reproduces the features already described in the South: a long period of drought in the summer, a crystalline massif (in the north-east), an active volcano, broken Tertiary hill country in the interior, fertile coastal lowlands. There are however no proper structural basins in the interior, while sandstones, marls and clays are much more widespread than limestones.

In the north-east the Nebrodi and Peloritani mountains are a continuation of the Calabrian crystalline massifs and exceed 1,500 metres in places, forming a barrier behind the north-facing Val Demone. To the south the great cone of Etna, 3,263 metres at its highest, dominates the landscape, being visible on a clear day from many points on the island and in Calabria, and from far out at sea. Elsewhere there are no such prominent mountains but rather a number of isolated mountain areas (750–1,500 metres) such as the Monti Sicani and Monti Iblei, separated by lower but still relatively rugged hill country, the general level descending towards the south-facing coast of the island. The largest lowland occurs in the
east, the Piana di Catania. Along the north coast, and the east
cost as far as Catania, there is a mountain-backed Riviera-like
landscape. Along the south coast hill country reaches to the
sea in many places leaving only modest-sized lowlands. Only
25% of Sicily is classified as mountain, but 61% is hill country
and 14% plain.

With steep slopes, fertile soils the exception, most of the land
of mediocre quality, and with very hot dry conditions through-
out the summer, Sicily is not the flourishing garden of the
Mediterranean it is so often said to be; its cereal yields are
among the lowest in Italy and lack of fodder in the summer
greatly restricts livestock carrying capacity. Most of the interior
and the southern coastlands of the island have an economy
based on wheat cultivation supplemented by olives, beans and
carobs. Specialised tree crop cultivation is largely restricted to
the east and north coastlands and the extreme west.

The hydro-electric potential is very limited and Sicily
depends on power from Calabria and on thermal electricity.
Output from its famous sulphur deposits has declined in recent
decades, but some mines are being revived by modernisation.
On the other hand, the extraction of oil in the south-east has
made great progress lately. Industrially, Sicily comes very low
among the regioni of Italy. Metallurgical, engineering and
textile industries are virtually non-existent, but, as in Apulia
and Campania, food processing is well represented, while
recently progress has been made in developing chemicals.
There are plans to build a steelworks in Palermo.

The most densely populated part of Sicily extends from
Marsala and Trapani in the west, in a narrow strip along the
north and east coasts as far as Syracuse. There is a dense,
partly dispersed, rural population along this strip, which also
contains the six largest towns on the island. These coastlands
account for almost all the agricultural products sold elsewhere.
High grade wines are prepared in the west, and citrus fruits are
grown in the Conca d'Oro behind Palermo, all along the north
coast and on the south-eastern, lower slopes of Etna as well
as in the Piana di Catania.

In the interior, agriculture is less on a commercial basis;
large nucleated hilltop centres, very urban in appearance,
dominate the settlement pattern, and farm labourers often
walk several kilometres to the land they work. There is a
limited surplus of wheat and other foodstuffs from the interior,
but this presumably goes to make up the deficit in the areas of specialised agriculture and in the larger towns.

Over 30% of the population is in the six largest towns, an excessive concentration of population in places of this size, given the predominantly agricultural nature of the economy. In the west, Trapani (76,000) and Marsala (81,000) are centres of the wine industry as well as being small ports. Palermo (587,000), the largest town in the island and sixth in Italy, is the capital of Sicily and regional centre for the western half of the island. It is an attractive town, in spite of its large areas of slum tenements, and has a wonderful setting, but, like Naples, its great size is not justified economically. The shipbuilding industry employs a few thousand persons, Fiat is planning to manufacture motor vehicles, and a new chemical works is under construction, but the 28,000 employed in manufacturing in the commune is only a small percentage of total employment. Monreale, a hill town to the south-west, has some fine Moorish architecture from the time when the Saracens held the western part of Sicily.

Messina (251,000) like Palermo has very little industry. Though almost completely destroyed by an earthquake fifty years ago, it has been rebuilt and has grown to a considerable size. Between Messina and Taormina is the principal resort coast of Sicily, Taormina and Acireale being favourite centres. Etna itself is used for winter sports. Catania (361,000), the regional centre for the eastern part of Sicily, is another impressive city with mainly service functions, the regional centre for the eastern part of the island. Syracuse (90,000), on the other hand, has come to life since the Second World War thanks to the development of industry in the south-east of Sicily. At Augusta, 20 km to the north, is one of Italy’s largest oil refineries and a large chemicals complex. In the vicinity of Ragusa over 2m tons of oil are now produced. Gela is the site of the latest project, a large petrochemicals plant based on local oil.

In the interior of Sicily life continues at a slower pace. Enna (28,000) and Caltanissetta (62,000) are high province capitals, stagnating service centres with much unemployment and few prospects of change in the immediate future. Some improvements have been made in the vicinity of Agrigento (47,000), however, thanks to the revival of sulphur mining and the exploitation of potash deposits, and the trade of Porto Empe-
docle is growing fast. The easiest lines of movement across the island to the Strait of Messina are along the north and east coasts and only difficult railways with steep gradients penetrate the interior. The area immediately south of Palermo remains the most backward part of the island, still stifled economically and socially by the hold of the Mafia, a secret society considered by some to have originated during the period of African domination of western Sicily, for it does not exist in the east.

Though resembling Sicily in certain ways, Sardinia has a number of features that make it less typically Italian and more generally Mediterranean. Structurally and geologically it differs from the Peninsula, while historically its ties since the fall of the Roman Empire have largely been with the northern part of Italy or with eastern Iberia. The island has been long settled and its many nuraghi, stone houses or towers, date back several millennia. The cultural stagnation of the island since its possession by Rome is very obvious, for the dialects have remained much closer to Latin than have those in the rest of Italy. For example, some place names are unlike any to be found elsewhere in Italy: Calangianus, Selargius, Iglesias, Decimomannu. Today the island lags behind the rest of Italy on account of its isolation.

Geologically, Sardinia is older than most of Italy, having in the southern part considerable outcrops of Palaeozoic rocks. Among these are coal deposits. The north-east, on the other hand, consists of a crystalline massif, while in the north-west there are considerable areas of basaltic rock. Limestone is even more limited in occurrence than in Sicily. Though over 1,000 metres and rugged in places, Sardinia is less obviously mountainous than the Apennine core of the Peninsula. Only 14% is counted as mountain, 19% as plain. The Monti del Gennargentu, reaching 1,834 metres at their highest, dominate the east central part of the country, while a lower range crosses the northern half of the island from south-west to north-east and the south-west of the island also has two distinct mountain areas. The largest area of lowland is the Campidano, which runs north-west from Cagliari.

Soils are generally poorer in quality even than in Sicily, and although the island is further north its low rainfall and summer drought make climatic conditions no more promising. If Sardinia did not have far fewer people than Sicily it would be
Fig. 13.1 Sicily and Sardinia. Relief, towns and railways. All maps are on the same scale.
a poorer version of its neighbour, for only 32% of the island is under field crops and a mere 4% under tree crops. As it is, the total area of crop land per person is higher than in Sicily. 40% of Sardinia is rough pasture of very poor quality and the rest equally poor forest. There is a heavy dependence on sheep raising and on wheat cultivation, though yields of wheat are very low. The vine, the olive, vegetables and other special Mediterranean crops are cultivated largely for use in the island,

Fig. 13.2 Palermo and Catania. The maps are on the same scale.

not for sale elsewhere. The lowlands are characterised by fairly large nucleated agricultural settlements, but in the more rugged parts villages are small.

Sardinia has been one of Italy’s principal mining areas, but employment has declined sharply in the 1950s from about 24,000 in 1951 to 13,000 in 1961, largely due to the winding up of the uneconomic coal industry in the south-west of the island. Output of coal per worker has been lower than almost anywhere else in Europe. Large-scale manufacturing is absent, but a large petrochemicals plant is to be built in the Sassari–Porto
Fig. 13.3 The Strait of Messina and Cagliari areas.
Torres area. Electricity consumption per inhabitant is very low, but reservoirs have been built on the Tirso and Coginhas and there are three moderate-sized hydro-electric power stations in the island.

Cagliari (181,000) is the regional capital of Sardinia. Its manufacturing function is limited (8,000 are employed), however, and it is mainly commercial and administrative as well as being a port. In the vicinity (see Fig. 13.3) are Italy's largest salt pans. Sassari (89,000) at the other end of Sardinia has similar functions to Cagliari but is an inland centre. Porto Torres and Olbia are the ports of the north, Nuoro (23,000), one of Italy's smallest province capitals, is in the mountainous interior, and Carbonia is one of Italy's rare mining towns.

Distance and the need to tranship goods make inaccessibility the principal problem of Sardinia. Small in population and poor in resources, it cannot usefully have large factories producing for its own regional market. Its predicament is not unlike that of Northern Ireland in relation to the United Kingdom, but a Northern Ireland with virtually no industry at all. Its isolation has left its long attractive coastline untouched and Sardinia is now advertising itself as the California of Italy in the hope of exploiting its only asset, an unspoilt Mediterranean landscape.

In conclusion it seems appropriate to draw attention to the existence of works, available in English, that bring home more forcefully than can be hoped in a geography book the human conditions in the South and Islands. Carlo Levi's Christ Stopped at Eboli has already been mentioned. More recently some of the writings of Danilo Dolci, who has worked in western Sicily, have been published in English.

Here let us look at the views of an Italian, G. Tarozzi, describing Caltanissetta and its province in Le Vie d'Italia (September 1962) for the benefit of his compatriots who have never been to Sicily. What he says could apply to many of the more remote areas of the Peninsula and Sicily: 'Let us be frank: it (Caltanissetta) is a poor, miserable, plain town, even squalid in spite of the great sun, the blue sky and the rugged hills that surround it. It is silent, without the noise of urban traffic. It is the poor capital of a poor zone.' He points out that of the 60,000 inhabitants, 13,000 are on the poor list of the commune and the number of unemployed is not known precisely. Nearly one quarter of the population was illiterate in 1951. Tarozzi then
goes on to sum up the economic situation. This part of Sicily depended on the sulphur mines 'in which there were no safety measures, where the men worked naked, letting the sulphur dust burn them and eat into their skin'. Boys followed in the footsteps of their fathers. 'And if people did not work in the mines, they toiled in the fields for a handful of beans or wheat or a few almonds, the only crops that succeed in this miserable sun scorched countryside. The third possibility for anyone born in Caltanissetta was this: to be unemployed.'

He concludes that the Italian economic miracle has obviously not reached Caltanissetta or many other places like it. Not only has the problem of the South not been solved; it has not yet even been faced in such areas.

SUGGESTION FOR FURTHER READING

F. Milone: *Sicilia—La natura e l'uomo*, Paolo Boringhiere, Turin 1960
Chapter 14

CONCLUSIONS

14.1 BASIC DISTRIBUTIONS

Now it seems opportune to draw together, with the help of Figs. 14.1 and 14.2, the main features of distribution of population, economic activity and lines of movement in Italy.

Fig. 14.1 (main map) shows the distribution of the more productive agricultural land, of the minerals and hydro-electric supply and of manufacturing. The poorer agricultural land coincides, basically, with the mountains of the Alps, Apennines and Islands, but is related also to infertile areas of hill country. The inset map shows the most sparsely populated provinces of the country, and these are clearly related to the poorest agricultural lands.

Extractive industries nowhere employ large numbers in Italy but the value of mineral production is considerable in a number of districts. The main producing areas of natural gas, oil and other minerals are noted. Hydro-electricity is one of Italy’s principal resources, and has been represented by symbols each representing approximately 1,000m kwh generated in 1960, or just over 2% of the Italian total. The preponderance in the Alps is evident.

Persons engaged in manufacturing are also very unevenly distributed over the national area. Only communes employing more than 15,000 persons in manufacturing in 1961 are mapped. It will be noted that south of Florence there are only four, Rome, Naples, Bari and Palermo, while north of Florence (and including it) there are 29. Moreover, the four south of Florence are all large centres and could hardly avoid having some persons classed under manufacturing, though a considerable proportion are really in services of a manufacturing nature. In reality, of the 13 communes of Italy with over 250,000 inhabitants, only Milan and Turin have anywhere near half of their employed population in manufacturing. 1951 census data show that even among smaller communes it is exceptional to find anywhere in Italy more than 60% of the employed population of a commune in manufacturing.¹

¹ At the time of writing, not enough of the 1961 material had been published for recent trends to be shown.
Almost all the truly industrial centres of Italy are in the Milan area, and away from here almost all Italian towns are essentially service rather than manufacturing centres; smaller towns situated in extensive communes often have a considerable number of persons employed in agriculture as well.

Turning briefly to transportation in Italy, Fig. 14.2 has been produced to show the principal routeways. The lines of movement indicated are based on railways but it should be noted that trunk roads follow roughly the same courses. The busiest
Fig. 14.2 Principal lines of movement. Inset maps show areas reached via the various main railways leaving Italy, and major regional centres.
axis of movement in Italy is the double-track, electrified and excellently maintained Naples–Rome–Florence–Bologna–Milan line. This line will soon be paralleled throughout by the Autostrada del Sole. The railway continues north through the Gotthard tunnel in Switzerland to form Italy’s main and most direct link with the industrial core of the European Economic Community, that is the heavy industrial areas of north-east France, the Rhine valley and the Ruhr, Belgium and the Netherlands. Secondary axes have then been distinguished, some hardly less vital than the main axis: the west–east Turin–Trieste line, also duplicated most of the way by the Turin–Venice Autostrada, and the heavily used Milan–Genoa and Turin–Genoa routes. Of considerable national importance are the two coastal routes of the Peninsula, Genoa–Rome–Reggio di Calabria–Sicily and Bologna–Ancona–Bari. Some other routes of considerable regional if not national importance have also been suggested by broken lines. The inset map shows roughly the areas outside Italy reached by each of the main routes across Italy’s land boundary.

An axis of movement of particular importance can be distinguished in many countries, though on account of different circumstances in different countries, it is more strongly developed in some than in others. Confining the comparison to countries of western Europe only, it may be noted that in the United Kingdom there is one axis of particular importance, London–Birmingham–South Lancashire. Here the main rail axis, four tracks most of the way, is being electrified, and is paralleled much of the way by the Motorway M1. In West Germany a new north–south axis is appearing in place of the pre-war east–west axis, and the completion of the trans-German Hafabra autobahn is noteworthy. In Spain and France such a dominant axis is less obvious, but in France the Paris–Lyon–Marseille route is of considerable importance. Proximity to such an axis of movement would presumably be an advantage for some economic activities. In Italy the continuing growth of Milan and Turin and the rapid expansion of industry since the war in Veneto, Emilia and Tuscany may be related to the axis. Calabria, Sicily and Sardinia, like Scotland, Northern Ireland and north-east England in the United Kingdom, seem to be the least promising areas for development.

Population was discussed at some length at an early stage
in this book and what follows is only a summary of some outstanding features. Fig. 14.1 (inset map) shows that there is a considerable degree of concentration of population in Italy. The eleven provinces with the highest density of population cover only 7% of the national area but have 25% of Italy’s population. A century ago these same provinces (there have of course been boundary changes in the meantime) had a much smaller proportion of the total population of Italy. At the other extreme the sixteen provinces with the lowest density of population in Italy cover 25% of the area but have only 10% of the population. A century ago these provinces had a higher proportion of the population. In other words a growing proportion of the total population is becoming concentrated in a diminishing proportion of the total area, a result of the urbanisation resulting from the decline of agriculture as an employer of labour and the rapid rise of other activities in towns.

The figures for the intercensal period 1951-61 show that the trend is currently more marked than ever. Of the total increase of almost 3m, well over 1m (37% of the national total) took place in Rome, Milan and Turin communes (not provinces) alone. Almost all the rest occurred in the remaining province capitals. Only two out of 92 capitals actually lost population in the period, and only seven failed to increase by more than 6.2%, the rate of increase for total population. Although most smaller province capitals are holding their own as minor regional centres, thanks to their administrative importance and commercial functions, a limited number of large and fast growing centres have emerged more and more clearly as major regional centres. The study of the urban hierarchy in Italy is of great interest since there is a more regular spatial distribution of towns and less distortion due to industrialisation than in European countries further north. Moreover the administrative system of provinces is consciously based on existing towns and takes into account the rise of new centres. Here there is space only for a summary table (see page 242).

Italians seem to agree widely on the major role as regional centres of the largest eleven communes (see table). After Bari the centres with 150-300,000 inhabitants are of diminishing regional importance, Trieste and Messina because they have greatly reduced ‘hinterlands’ and others mainly because they are too close to a larger centre. On the other hand a considerable number of towns with between about 75,000 and 150,000
### ITALY: CONCLUSIONS

#### POPULATION IN THOUSANDS

<table>
<thead>
<tr>
<th>Commune</th>
<th>1961</th>
<th>Absolute gain 1951–61</th>
<th>Employed in manufacturing 1961</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rome</td>
<td>2,162</td>
<td>491</td>
<td>112</td>
</tr>
<tr>
<td>Milan</td>
<td>1,581</td>
<td>307</td>
<td>442</td>
</tr>
<tr>
<td>Naples</td>
<td>1,180</td>
<td>169</td>
<td>84</td>
</tr>
<tr>
<td>Turin</td>
<td>1,019</td>
<td>300</td>
<td>252</td>
</tr>
<tr>
<td>Genoa</td>
<td>775</td>
<td>87</td>
<td>94</td>
</tr>
<tr>
<td>Palermo</td>
<td>587</td>
<td>86</td>
<td>28</td>
</tr>
<tr>
<td>Bologna</td>
<td>441</td>
<td>101</td>
<td>67</td>
</tr>
<tr>
<td>Florence</td>
<td>498</td>
<td>64</td>
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<td>361</td>
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<tr>
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<td>311</td>
<td>43</td>
<td>17</td>
</tr>
<tr>
<td>Trieste</td>
<td>273</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>Messina</td>
<td>251</td>
<td>31</td>
<td>7</td>
</tr>
</tbody>
</table>

act as regional centres of some influence in areas more remote from the major centres. Examples are Bolzano, Ancona, Perugia and Sassari. In conclusion it may be noted that Italy has neither the coalfield conurbations characteristic of Britain, West Germany and parts of France, nor one dominant centre like London or Paris. Greater Paris, with over 8m people, has more inhabitants than the seven largest towns in Italy together, and it is at least as important to France as Rome, Milan and Turin combined are to Italy.

### 14.2 REGIONAL DIFFERENCES IN LIVING STANDARDS

In no country could purchasing power per inhabitant be expected to be uniform throughout the national area. Regional differences are much greater in some countries than in others, however, and are particularly marked in Italy. Much work has been done in Italy on regional differences in the per capita value of production, purchasing power and so on, and results vary somewhat according to the criteria selected. Invariably, however, the same broad pattern appears: the north-west is the most prosperous general area, but the province of Rome also stands out, though alone, in the Peninsula, as one of the highest. The level is appreciably lower in north-east and north-central Italy and drops thereafter south-eastwards along the Peninsula to its lowest in the mountainous interior provinces of
DIFFERENCES IN LIVING STANDARDS 243

the South, the level being somewhat higher in Campania, Apulia and the Islands.

A study of the income (redito) derived from all economic activities shows a difference between 611,000 lire per inhabitant per year in the province of Milan and 113,000 in the province of Potenza (the national mean being 286,000). Calculated on this basis, the level is over five times higher in the most prosperous province than in the poorest. Data for the 92 provinces are mapped in Fig. 14.3. A study of consumption and expenditure on six selected items shows the same general pattern but a somewhat larger gap, the index for Milan being 187 and for Potenza, 32, if the national mean is 100. A comparison of provinces based on the number of motor vehicles in circulation gives an even wider gap: this time Turin is highest, with almost ten times as many vehicles per 1,000 inhabitants as Potenza, still the lowest. Everything, in fact, points to a great contrast between North and South, but the distribution of purchasing power, however expressed, is more subtle than just this, as Fig. 14.3 suggests.

As a result of changes in purchasing power in the post-war period the gap has actually been widening. Both North and South have improved, but as the rate of improvement has been roughly the same, in absolute terms the gap is wider now than before, since the North started from a larger total.

The reasons for the great regional contrasts are many, but two, which will have become clear to the reader already, are of outstanding importance. Firstly, agricultural yields are much higher in the North than elsewhere in Italy, and secondly, most of the large-scale industry, the hydro-electric capacity and now the natural gas, are concentrated in the North. How profound the influence of this combination of superior resources is can better be appreciated by a comparison with Britain. Here, two centuries ago, the south-east was the most prosperous part thanks to the generally good quality of the land. The coalfields, on the other hand, occur on the margins of or within the poorer part of the country, agriculturally speaking, so that industrialisation until the present century took place mainly away from the more prosperous south-east. Recently, however, industry has developed more rapidly in the

1 Fig. 14.3 shows the uneven distribution of per capita income in Italy in 1960 and is one of many sets of figures provided by G. Tagliacarne to demonstrate the distribution of wealth in Italy. See Appendix 9 for reference.
south-east, thus giving a much more even spread of persons engaged in manufacturing than in Italy and leaving depressed industrial areas but not depressed agricultural areas. As a result, the gap in Britain is not nearly so wide as in Italy; about 1 to 2 for general consumption, 1 to 3 for motor vehicles. Spain, on the other hand, is not unlike Italy in having a more prosperous north and depressed south, while in Brazil, which is, of course, many times larger than Italy, the contrast between the most advanced parts of the south and the poorest parts of
the north-east appears to be greater even than between regions in Italy.

Regional differences in economic level in Italy are closely related to many of Italy’s social and political problems as well as economic ones. Oddly enough, however, regional differences in political opinion, as expressed in the three post-war national elections, 1948, 1953 and 1958, are not related in a straightforward way to economic differences. In other words, the Communist vote is not concentrated in the poorer agricultural lands of the South. The problem of the South, therefore, has not been one of immediate concern, politically speaking, to the post-war governments of Italy, one reason, perhaps, why relatively little has been done so far to introduce improvements. Even so, the distribution of political opinion, as expressed in the three general elections, is of geographical interest and merits a brief description and some comments before the problem of the South is summarised.

14.3 REGIONAL DIFFERENCES IN POLITICAL OPINION

For the purposes of the national elections Italy is divided into 31\(^1\) voting districts. The number of votes is counted for each political party and a party wins one representative for each 80,000 votes cast in its favour. In this system a residue of votes is bound to remain from each district, and these are pooled for the country as a whole and each party given an appropriate number of seats in the National College (Collegio unico nazionale), in addition to their regional seats (sedi circoscrizionali). There is no difficulty, therefore, in finding the proportion of Communist votes in each electoral region. This has been done and is mapped in Fig. 14.4. The Communists have of course collaborated at times in the post-war period with other political parties and the proportion of Communist plus associated Left party votes was greater some years ago than now. For simplicity, however, only the Communist vote is considered. In all three elections it has been between 20\% and 25\% of the total votes.

In 1948 the Communists were strongest in North-Central Italy, especially Emilia-Romagna and Tuscany. In some districts here they won over half of all votes cast. They were also powerful in the industrial centres of Piedmont and Liguria.

\(^1\) In Fig. 14.4 Valle d’Aosta (XXXI) has for convenience been included with Turin (I).
Fig. 14.4 Distribution of political opinion in Italy, 1948, 1953 and 1958. 
Note: For simplicity the Valle d’Aosta district has been included with Turin.
The Communists were weakest, on the other hand, not only in Trento-Bolzano in the Alps, but also in some of the poorest and most deeply rural areas of the South, notably Campobasso and interior Campania. The Communist Party at this stage attracted both industrial workers of the north-west and peasants in the more prosperous parts of Italy who were not satisfied with the land-tenure system.

1953 saw a strengthening of the Communist hold in Emilia-Romagna, Tuscany and Umbria and the appearance in Sicily of a substantial Communist vote. These gains were, however, offset by considerable losses in the industrial centres of the north-west. 1958 showed a continuation of this trend, with an increase in the proportion of Communist votes in the South, and almost all of Italy north of the Po without a large Communist vote.

The results of the three elections are summarised in the inset maps. North-Central Italy emerges as the Communists’ stronghold, but Bari-Foggia in Apulia is a secondary area of Communist strength. The trend between 1948 and 1958 has been for the proportion of Communist voters to diminish gradually in the northern half of Italy and to grow in the southern half. Regionally the great concentration of Communists in North-Central Italy is to be explained partly by the widespread occurrence of the mezzadria land-tenure system (see Fig. 6.5), partly by the strong anti-Catholic spirit developed when this part of Italy was in the States of the Church.

The changing fortunes of the Communists throw light on a matter of both national and international interest. In 1948, Communism was definitely strongest in the more prosperous part of Italy, the part in which it was easier to organise election campaigns and reach the mass of the population, which in this half of the country is virtually entirely literate. Northern Italy also, of course, had a strong anti-German partisan movement in the last two years of the Second World War when the Peninsula was being taken by the Allies. Now, however, that the North has become so much more affluent and the rivalry between industrial owners and workers less acute, the Communist Party has been losing its influence.¹ In 1948, on the

¹ The results of the 1963 General Election became available after this section was written. They showed that this trend was reversed after 1958. In 1963 the Italian Communist Party received roughly 1m more votes than in 1958, increasing its share of the total from 22.7% to 25.3%. It made considerable gains in the North.
other hand, Communist ideas had not spread much into the Peninsula and the area was so poor and backward that the deeply Catholic and conservative (not in the sense of a particular political party) spirit of the population, prosperous and poor alike, could not suddenly absorb Communist ideas. The gradual awakening of the South and the general if slow rise in living standards since 1948 has made the area more susceptible to Communist influence and local Communist groups more easy to organise. In other words, in the Italian context anyway, a reduction in the level of poverty has paved the way for an increase in the Communist vote, though the increase may be expected only to be temporary if eventually the South and Islands reach the level of affluence now enjoyed in the North.

In conclusion, an interesting contrast between Italy and France may be noted. The 1958 elections in France showed a high proportion of Left voters in the coalfield industrial region of the north-east, though a very small proportion of Left voters in some other industrial areas. The Left was strongly represented in France, also, in the Mediterranean departments. Communism appears currently to have a stronger hold among the industrial and transport workers of France than of Italy, but to be weaker, generally, among the agricultural population, thanks to the widespread and politically conservative if economically inefficient peasant farmer owning the land he works.

14.4 THE PROBLEM OF THE SOUTH

Successive Italian governments have endeavoured to foster economic developments in the South. Various bodies have been set up to improve conditions for industrialisation but the best known and most powerful financially is the Cassa per il Mezzogiorno.\(^1\) With the help of funds derived mainly from the more prosperous areas of Italy and channelled through the government, this body has been operating for more than a decade now to pave the way for industrialisation by strengthening agriculture and other activities and providing an infrastructure of services, including improved transport facilities. This process is known as preindustrializzazione.

\(^1\) Full title: Cassa per opere straordinarie di pubblico interesse nell'Italia meridionale.
The financial resources of the Cassa up to 1961 were shared out roughly as follows, excluding direct assistance to industries: 55% to land improvements (reclamation, afforestation and so on, but not Land Reform), 21% for water supply, 21% for improvements to roads, railways and ports, and 3% for works of tourist interest. In 1957 the Cassa was given authority to foster the establishment of industry by direct subsidy and concessions to new factories. Assistance is however limited to small and medium-scale plants and to areas away from the largest towns. The industries that have benefited included chemicals, which by June 1961 had received about one-third of all assistance, food and associated industries over one-sixth, and engineering and the processing of non-metallic minerals each rather over one-tenth.

As ideas on industrialisation became more clear, the Cassa was authorised by laws of 1957 and 1959 to encourage the creation of industrialisation areas and nuclei, or, to use the Italian expression, poles of industrial development (polsi di sviluppo industriale), organised with a sufficiently large industrial base to continue expanding in the future by spontaneously attracting new factories. The Taranto integrated iron and steel works, though too large to be directly financed itself by the Cassa, is an example.

Fig. 14.5 shows some of the main developments in the Mezzogiorno since the war, including many not directly sponsored by the Cassa. The ‘Mezzogiorno’ consists of the South (including Abruzzi e Molise) and Islands, Lazio and the Isle of Elba (in Leghorn province) in Tuscany, and for industrial purposes, also the Marche.

The future prospects of the Mezzogiorno seem reasonably bright, although many obstacles to improvement still have to be overcome. There is still a very large proportion of unemployed and underemployed population in the southern half of Italy. The surplus labour can and does emigrate to the North of Italy, but northern industrialists prefer to employ northern workers, and there is slack to be taken in here still, while theoretically inter-regional movement is still illegal, a relic of the Fascist period. Emigration takes place to other countries in western Europe but is usually only temporary, and to other continents, in this case usually permanently. But the natural rate of increase of population in the Mezzogiorno is
higher than the national average\textsuperscript{1} and the labour force continues to grow. The creation of new employment in the area itself has therefore been the main preoccupation of the Italian

\textbf{Fig. 14.5} Recent developments in the South and Islands.

\textsuperscript{1} In 1960 the excess of live births over deaths was only 8.5 per 1,000 inhabitants in Italy, but 15–16 in Calabria, Campania, Basilicata, Sardinia and Apulia, and 13.5 in Sicily.
government. This depends either on a more thorough utilisation of the resources of the Mezzogiorno or on using its ports and its labour and exploiting its position to transform imported raw materials. The resources of the region include special climatic conditions suitable for the cultivation of certain crops not grown further north, a modest hydro-electric potential and a growing inventory of minerals. The position of the Mezzogiorno offers certain advantages since the region is located at the extremity of the European Economic Community closest to the underdeveloped countries of Asia and Africa. Already imported oil and other minerals are received, processed and in part sent on to other areas in Italy and to foreign markets.

Unfortunately, however, many of the major development projects of the Mezzogiorno tend to lead to greater productivity per worker, rather than to the creation of a large number of new jobs. Land reform has encouraged the more intensive use of land in many areas but it has resulted in resettlement of agricultural workers from overpopulated areas rather than completely new employment. In industry the emphasis is on branches such as chemicals, oil refining and steel production, which require a large amount of capital, but, once established, only a limited labour force. Unemployment in the Mezzogiorno is counted in hundreds of thousands, the total employment in new agricultural and industrial enterprises only in tens of thousands. Nevertheless there is now a general feeling that something is at last being done for the Mezzogiorno and hope for the future rests on the area expanding its special Mediterranean crops to cater not only for the rest of Italy but for the whole of E.E.C., and on its serving as the southern industrial base for E.E.C. organised to trade more with Asia and Africa (a dream of Mussolini). At present the northern half of Italy accounts for a very large proportion of Italy’s exports and the Mezzogiorno has not been paying its way. For various reasons, therefore, Italy’s entry into E.E.C. is closely connected with the problem of the South.

14.5 E.E.C. AND ITALIAN FOREIGN TRADE

In 1952 Italy became a member of the European Coal and Steel Community, joining France, West Germany and the Benelux in a union to organise the coal and steel industry of the six countries. On 1 January 1958, these six countries, having signed and ratified the Treaty of Rome in the pre-
vious year, became members of the European Economic Community.\(^1\) Although including an enormous number of provisions concerning mobility of labour, integrated transport, balance of payments and so on, the outstanding implication of the Treaty is the conscious creation of a single economic unit, with no internal tariff barriers between the member countries and a uniform external tariff around the six—a Customs Union or Common Market. Italian producers, like their counterparts in the other five countries, must now therefore think in terms of a home market of about 170m people, for it is only a matter of years before internal tariffs disappear completely and the single market comes into being.

When Italy joined E.C.S.C. in 1952 it was then widely assumed that its supposedly shaky iron and steel industry (established largely on imported coking coal, iron ore and scrap steel) would suffer in the face of competition from the apparently more soundly based iron and steel industry of France, West Germany and Belgium-Luxembourg. In fact for various reasons, including the rising cost of coking coal in the coalfield countries and deliberate planning in E.C.S.C., the Italian iron and steel industry has been expanding more rapidly since 1952 than that of any of the other five countries. This example shows that in making forecasts one is clearly on very dangerous ground. Even so, some tentative implications of Italy’s position in E.E.C. may be suggested.

Firstly, Italy is further than any of the other five E.E.C. countries from the centre of gravity of population and of industrial production. Italian industries, therefore, are further than most of those of the other countries from the main concentration of purchasing power in E.E.C., and those of southern Italy even more remote than those in North Italy. The entry of the United Kingdom into E.E.C. would of course even further emphasise the marginal location of Italy. On the whole, therefore, it would seem that Italian factories producing for the whole E.E.C. market (as opposed to those serving a local market) would suffer somewhat from inferior location (those in the North, however, being better placed than those in the South) and success could be expected only through this being offset by the exploitation of particular attributes of the Italian industrial scene such as great skill in industrial design, a parti-

\(^1\)In 1962 Greece became an associate member and in 1963, Turkey, Euratom, the European Atomic Energy Community, was initiated at the same time.
cular ability to innovate in light engineering, and so on. Precisely which branches will be adversely affected it is of course impossible to say at this stage.

Secondly, Italy’s marginal and southern position gives it an advantage shared to a limited extent only by France, a Mediterranean climate. If this were not associated with generally poor soils and steep slopes, Peninsular and Insular Italy would be much better off than it is. Even as things are, Italy has room to expand its production of crops not commercially cultivable elsewhere in E.E.C.: citrus fruits, olives, many early vegetables, nuts, as well as certain types of wine, less easily produced elsewhere. The Mediterranean climate is also a tourist attraction. Italy’s entry into E.E.C. gives the Mezzogiorno a fuller chance to exploit these attributes, especially now that the position of France in north-west Africa is appreciably weakened. On the other hand, the possible entry of Spain into E.E.C. as a full member would rob Italy of its near monopoly of Mediterranean climate, and must be regarded with some apprehension by Italy.

Thirdly, an increasing share of Italian foreign trade is likely to be with fellow E.E.C. members. Nevertheless, Italy will continue to need many goods not produced in other E.E.C. countries.

The following figures show clearly the trend in the last decade:

<table>
<thead>
<tr>
<th>Years</th>
<th>Imports, %</th>
<th>Exports, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951</td>
<td>15.5</td>
<td>21.2</td>
</tr>
<tr>
<td>1957</td>
<td>21.3</td>
<td>24.9</td>
</tr>
<tr>
<td>1959</td>
<td>26.6</td>
<td>27.5</td>
</tr>
<tr>
<td>1960</td>
<td>27.7</td>
<td>29.5</td>
</tr>
</tbody>
</table>

In the 1950s the share of Italy’s total trade with the five other E.E.C. countries has increased greatly, and if present trends continue, soon one-third of its trade should be in E.E.C. Another striking trend in the 1950s has been the decline of Italy’s trade with the U.S.A., on which in the immediate post-war years it depended heavily for many imports. Even

1 See Appendix 6 for details of Italian foreign trade.
without the establishment of E.C.S.C. and then E.E.C., however, it seems probable that Italian trade would have continued to expand faster with these countries than with most others.

In conclusion it is suggested that very soon it will be unrealistic to treat Italy or any other E.E.C. country as a sovereign state since economic union and consequent growing interdependence mean that economic development will become integrated and some degree of political interdependence must follow.\(^1\) At present Italy is the poor member of the family, but recently published figures suggest that in the 1960s it should be able to improve its relative position appreciably, and draw nearer to the level of its fellow members of E.E.C. Between 1960 and 1970 its share of total E.E.C. output is expected to rise from 17.7\% to 19.6\% and its gross national product (in millions of 1960 dollars) from 32,020 to 56,547, while the number of unemployed is expected to drop from 850,000 in 1960 to 310,000 in 1970. If this happens, and the Italian economic miracle really spreads to the South, then the decision to join E.E.C. will have been no less momentous than the unification of the country a century ago, but Italy will be on the way to eventual submergence in western Europe, after a century of existence as an independent nation of considerable distinction in the modern world.

\(^1\) This is regarded not only as inevitable but also desirable by leaders of the European Economic Community. See, for example, W. Hallstein: United Europe, Challenge and Opportunity (London 1962), especially pp. 36–43.
**Appendix i**

**POPULATION, AREA AND DENSITY OF POPULATION OF THE REGIONI, 1961**

<table>
<thead>
<tr>
<th></th>
<th>Population in thousands, 1961</th>
<th>Area in square kilometres</th>
<th>Persons per square kilometre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piedmont</td>
<td>3,890</td>
<td>25,399</td>
<td>153</td>
</tr>
<tr>
<td>Valle d'Aosta</td>
<td>100</td>
<td>3,262</td>
<td>31</td>
</tr>
<tr>
<td>Liguria</td>
<td>1,718</td>
<td>5,415</td>
<td>317</td>
</tr>
<tr>
<td>Lombardy</td>
<td>7,390</td>
<td>23,804</td>
<td>310</td>
</tr>
<tr>
<td>Trentino-Alt Adige</td>
<td>785</td>
<td>13,613</td>
<td>58</td>
</tr>
<tr>
<td>Veneto</td>
<td>3,834</td>
<td>18,377</td>
<td>209</td>
</tr>
<tr>
<td>Friuli-Venezia Giulia</td>
<td>1,205</td>
<td>7,851</td>
<td>154</td>
</tr>
<tr>
<td>Emilia-Romagna</td>
<td>3,647</td>
<td>22,123</td>
<td>165</td>
</tr>
<tr>
<td>Marche</td>
<td>1,347</td>
<td>9,692</td>
<td>139</td>
</tr>
<tr>
<td>Tuscany</td>
<td>3,267</td>
<td>22,990</td>
<td>142</td>
</tr>
<tr>
<td>Umbria</td>
<td>789</td>
<td>8,456</td>
<td>93</td>
</tr>
<tr>
<td>Lazio</td>
<td>3,923</td>
<td>17,203</td>
<td>228</td>
</tr>
<tr>
<td>Campania</td>
<td>4,756</td>
<td>13,595</td>
<td>350</td>
</tr>
<tr>
<td>Abruzzi e Molise</td>
<td>1,585</td>
<td>15,232</td>
<td>104</td>
</tr>
<tr>
<td>Apulia</td>
<td>3,410</td>
<td>19,347</td>
<td>176</td>
</tr>
<tr>
<td>Basilicata</td>
<td>648</td>
<td>9,988</td>
<td>65</td>
</tr>
<tr>
<td>Calabria</td>
<td>2,045</td>
<td>15,080</td>
<td>196</td>
</tr>
<tr>
<td>Sicily</td>
<td>4,712</td>
<td>25,708</td>
<td>183</td>
</tr>
<tr>
<td>Sardinia</td>
<td>1,413</td>
<td>24,089</td>
<td>59</td>
</tr>
</tbody>
</table>

**ITALY**                       | 50,464                         | 301,224                   | 168                         |
### Appendix 2

**PERCENTAGE OF TOTAL SURFACE OCCUPIED BY MOUNTAIN, HILL PLAIN AND CROPLAND BY REGIONI***

<table>
<thead>
<tr>
<th>Region</th>
<th>Mountain</th>
<th>Hill</th>
<th>Plain</th>
<th>Cropland†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piedmont</td>
<td>43</td>
<td>30</td>
<td>27</td>
<td>39</td>
</tr>
<tr>
<td>Valle d’Aosta</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Liguria</td>
<td>65</td>
<td>35</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td>Lombardy</td>
<td>41</td>
<td>12</td>
<td>47</td>
<td>46</td>
</tr>
<tr>
<td>Trentino–Alto Adige</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Veneto</td>
<td>29</td>
<td>14</td>
<td>57</td>
<td>56</td>
</tr>
<tr>
<td>Friuli–Venezia Giulia</td>
<td>43</td>
<td>19</td>
<td>38</td>
<td>32</td>
</tr>
<tr>
<td>Emilia–Romagna</td>
<td>25</td>
<td>27</td>
<td>48</td>
<td>65</td>
</tr>
<tr>
<td>Marche</td>
<td>31</td>
<td>69</td>
<td>0</td>
<td>67</td>
</tr>
<tr>
<td>Tuscany</td>
<td>25</td>
<td>66</td>
<td>9</td>
<td>51</td>
</tr>
<tr>
<td>Umbria</td>
<td>29</td>
<td>71</td>
<td>0</td>
<td>53</td>
</tr>
<tr>
<td>Lazio</td>
<td>26</td>
<td>54</td>
<td>20</td>
<td>61</td>
</tr>
<tr>
<td>Campania</td>
<td>35</td>
<td>51</td>
<td>14</td>
<td>68</td>
</tr>
<tr>
<td>Abruzzi e Molise</td>
<td>62</td>
<td>38</td>
<td>0</td>
<td>59</td>
</tr>
<tr>
<td>Apulia</td>
<td>2</td>
<td>45</td>
<td>53</td>
<td>79</td>
</tr>
<tr>
<td>Basilicata</td>
<td>47</td>
<td>45</td>
<td>8</td>
<td>51</td>
</tr>
<tr>
<td>Calabria</td>
<td>41</td>
<td>50</td>
<td>9</td>
<td>57</td>
</tr>
<tr>
<td>Sicily</td>
<td>25</td>
<td>62</td>
<td>13</td>
<td>78</td>
</tr>
<tr>
<td>Sardinia</td>
<td>14</td>
<td>68</td>
<td>18</td>
<td>35</td>
</tr>
<tr>
<td><strong>ITALY</strong></td>
<td>35</td>
<td>42</td>
<td>23</td>
<td>53</td>
</tr>
</tbody>
</table>

* Figures for mountain, hill and plain add up to 100 for each *regione*.
† 1959 figure.
Appendix 3

THE PROVINCES OF ITALY

The names of the provinces are listed on page 258.
<table>
<thead>
<tr>
<th>Province</th>
<th>Resident population in thousands</th>
<th>Of whole province</th>
<th>Of capital only</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Turin</td>
<td>1,433  1,814</td>
<td>1951</td>
<td>1961</td>
</tr>
<tr>
<td>2 Vercelli</td>
<td>380    397</td>
<td></td>
<td>42</td>
</tr>
<tr>
<td>3 Novara</td>
<td>423    456</td>
<td></td>
<td>64</td>
</tr>
<tr>
<td>4 Cuneo</td>
<td>580    540</td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>5 Asti</td>
<td>224    213</td>
<td></td>
<td>52</td>
</tr>
<tr>
<td>6 Alessandria</td>
<td>478    475</td>
<td></td>
<td>82</td>
</tr>
<tr>
<td>7 Valle d'Aosta</td>
<td>94     100</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>8 Imperia</td>
<td>167    200</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>9 Savona</td>
<td>238    260</td>
<td></td>
<td>68</td>
</tr>
<tr>
<td>10 Genoa</td>
<td>929    1,020</td>
<td></td>
<td>688</td>
</tr>
<tr>
<td>11 La Spezia</td>
<td>233    238</td>
<td></td>
<td>112</td>
</tr>
<tr>
<td>12 Varese</td>
<td>477    579</td>
<td></td>
<td>53</td>
</tr>
<tr>
<td>13 Como</td>
<td>563    621</td>
<td></td>
<td>70</td>
</tr>
<tr>
<td>14 Sondrio</td>
<td>153    161</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>15 Milan</td>
<td>2,505  3,150</td>
<td>1951</td>
<td>1,274</td>
</tr>
<tr>
<td>16 Bergamo</td>
<td>697    746</td>
<td>1961</td>
<td>1,581</td>
</tr>
<tr>
<td>17 Brescia</td>
<td>858    882</td>
<td></td>
<td>142</td>
</tr>
<tr>
<td>18 Pavia</td>
<td>507    515</td>
<td></td>
<td>64</td>
</tr>
<tr>
<td>19 Cremona</td>
<td>382    351</td>
<td></td>
<td>69</td>
</tr>
<tr>
<td>20 Mantua</td>
<td>425    385</td>
<td></td>
<td>54</td>
</tr>
<tr>
<td>21 Bolzano</td>
<td>334    375</td>
<td></td>
<td>71</td>
</tr>
<tr>
<td>22 Trento</td>
<td>395    411</td>
<td></td>
<td>62</td>
</tr>
<tr>
<td>23 Verona</td>
<td>646    664</td>
<td></td>
<td>179</td>
</tr>
<tr>
<td>24 Vicenza</td>
<td>608    616</td>
<td></td>
<td>80</td>
</tr>
<tr>
<td>25 Belluno</td>
<td>238    238</td>
<td></td>
<td>29</td>
</tr>
<tr>
<td>26 Treviso</td>
<td>613    609</td>
<td></td>
<td>63</td>
</tr>
<tr>
<td>27 Venice</td>
<td>740    735</td>
<td></td>
<td>317</td>
</tr>
<tr>
<td>28 Padua</td>
<td>715    695</td>
<td></td>
<td>188</td>
</tr>
<tr>
<td>29 Rovigo</td>
<td>358    277</td>
<td></td>
<td>46</td>
</tr>
<tr>
<td>30 Udine</td>
<td>796    769</td>
<td></td>
<td>73</td>
</tr>
<tr>
<td>31 Gorizia</td>
<td>134    137</td>
<td></td>
<td>41</td>
</tr>
<tr>
<td>32 Trieste</td>
<td>297    299</td>
<td></td>
<td>273</td>
</tr>
<tr>
<td>33 Piacenza</td>
<td>299    291</td>
<td></td>
<td>73</td>
</tr>
<tr>
<td>34 Parma</td>
<td>391    389</td>
<td></td>
<td>123</td>
</tr>
<tr>
<td>35 Reggio nell'Emilia</td>
<td>390    379</td>
<td></td>
<td>107</td>
</tr>
<tr>
<td>36 Modena</td>
<td>498    510</td>
<td></td>
<td>111</td>
</tr>
<tr>
<td>37 Bologna</td>
<td>764    837</td>
<td></td>
<td>341</td>
</tr>
<tr>
<td>38 Ferrara</td>
<td>421    400</td>
<td></td>
<td>134</td>
</tr>
<tr>
<td>39 Ravenna</td>
<td>295    328</td>
<td></td>
<td>92</td>
</tr>
<tr>
<td>40 Forli</td>
<td>486    513</td>
<td></td>
<td>78</td>
</tr>
<tr>
<td>41 Pesaro e Urbino</td>
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</tr>
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<td></td>
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<td>43 Macerata</td>
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<td>46 Lucca</td>
<td>367    360</td>
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<tr>
<td>47 Pistoia</td>
<td>220    229</td>
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<td>160</td>
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<td>58 Rome</td>
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<td>1,652</td>
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<td>645</td>
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<td>1,011</td>
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<td>379</td>
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<td>372</td>
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<td>669</td>
<td>98</td>
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<td>1,260</td>
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<td>73 Taranto</td>
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<td>462</td>
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<td>74 Brindisi</td>
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<td>343</td>
<td>58</td>
<td>70</td>
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<td>675</td>
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<td>698</td>
<td>57</td>
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<td>718</td>
<td>742</td>
<td>60</td>
<td>73</td>
</tr>
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<td>606</td>
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<td>422</td>
<td>422</td>
<td>73</td>
<td>76</td>
</tr>
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<td>82 Palermo</td>
<td>1,022</td>
<td>1,111</td>
<td>491</td>
<td>587</td>
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<tr>
<td>83 Messina</td>
<td>668</td>
<td>681</td>
<td>221</td>
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<td>84 Agrigento</td>
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<td>478</td>
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<td>47</td>
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<td>85 Caltanissetta</td>
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<td>302</td>
<td>61</td>
<td>62</td>
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<td>245</td>
<td>233</td>
<td>27</td>
<td>28</td>
</tr>
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<td>800</td>
<td>889</td>
<td>300</td>
<td>361</td>
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<td>88 Ragusa</td>
<td>239</td>
<td>247</td>
<td>49</td>
<td>55</td>
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<tr>
<td>89 Syracuse</td>
<td>323</td>
<td>349</td>
<td>71</td>
<td>90</td>
</tr>
<tr>
<td>90 Sassari</td>
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<td>380</td>
<td>70</td>
<td>89</td>
</tr>
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<td>91 Nuoro</td>
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<td>283</td>
<td>17</td>
<td>23</td>
</tr>
<tr>
<td>92 Cagliari</td>
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<td>139</td>
<td>181</td>
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| Italy          | 47,516 | 50,464 | 13,378 | 16,073 |
## Appendix 4

**TEMPERATURE AND PRECIPITATION DATA FOR SELECTED LOCALITIES**

<table>
<thead>
<tr>
<th>Station (Altitude in metres)</th>
<th>Mean Monthly Temperatures in degrees Centigrade</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>January (J)</td>
<td>February (F)</td>
</tr>
<tr>
<td>Cortina d’Ampezzo</td>
<td>-2.3</td>
<td>-1.3</td>
</tr>
<tr>
<td>(Dolomites) (1,275)</td>
<td>Bologna (60)</td>
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</tr>
<tr>
<td>San Remo (9)</td>
<td>9.7</td>
<td>10.0</td>
</tr>
<tr>
<td>L’Aquila (735)</td>
<td>2.1</td>
<td>2.6</td>
</tr>
<tr>
<td>Rome (51)</td>
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<td>8.0</td>
</tr>
<tr>
<td>Bari (12)</td>
<td>8.4</td>
<td>8.5</td>
</tr>
<tr>
<td>Naples (149)</td>
<td>8.7</td>
<td>8.7</td>
</tr>
<tr>
<td>Reggio Calabria (15)</td>
<td>11.1</td>
<td>11.1</td>
</tr>
<tr>
<td>Sassari (224)</td>
<td>8.3</td>
<td>8.4</td>
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<table>
<thead>
<tr>
<th>Mean Monthly Precipitation in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cortina d’Ampezzo</td>
</tr>
<tr>
<td>Bologna</td>
</tr>
<tr>
<td>San Remo</td>
</tr>
<tr>
<td>L’Aquila</td>
</tr>
<tr>
<td>Rome</td>
</tr>
<tr>
<td>Bari</td>
</tr>
<tr>
<td>Naples</td>
</tr>
<tr>
<td>Reggio Calabria</td>
</tr>
<tr>
<td>Sassari</td>
</tr>
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<table>
<thead>
<tr>
<th>Year</th>
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</thead>
<tbody>
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<td>1252</td>
</tr>
<tr>
<td>552</td>
</tr>
<tr>
<td>678</td>
</tr>
<tr>
<td>735</td>
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<td>604</td>
</tr>
<tr>
<td>793</td>
</tr>
<tr>
<td>568</td>
</tr>
<tr>
<td>586</td>
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Appendix 5

EMPLOYMENT IN MANUFACTURING IN COMMUNES WITH OVER 100,000 INHABITANTS IN 1961, ARRANGED ROUGHLY FROM NORTH TO SOUTH

<table>
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<th>II</th>
<th>III</th>
</tr>
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<tbody>
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<td>1,019</td>
<td>252</td>
<td>25</td>
</tr>
<tr>
<td>Genoa</td>
<td>775</td>
<td>94</td>
<td>12</td>
</tr>
<tr>
<td>La Spezia</td>
<td>121</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Milan</td>
<td>1,581</td>
<td>442</td>
<td>28</td>
</tr>
<tr>
<td>Bergamo</td>
<td>114</td>
<td>24</td>
<td>21</td>
</tr>
<tr>
<td>Brescia</td>
<td>174</td>
<td>38</td>
<td>22</td>
</tr>
<tr>
<td>Verona</td>
<td>221</td>
<td>30</td>
<td>14</td>
</tr>
<tr>
<td>Venice</td>
<td>336</td>
<td>46</td>
<td>14</td>
</tr>
<tr>
<td>Padua</td>
<td>198</td>
<td>27</td>
<td>14</td>
</tr>
<tr>
<td>Trieste</td>
<td>273</td>
<td>25</td>
<td>9</td>
</tr>
<tr>
<td>Parma</td>
<td>141</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td>Reggio</td>
<td>117</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>Emilia</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Modena</td>
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<td>23</td>
<td>17</td>
</tr>
<tr>
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<td>441</td>
<td>67</td>
<td>15</td>
</tr>
<tr>
<td>Ferrara</td>
<td>151</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td>Ravenna</td>
<td>115</td>
<td>12</td>
<td>10</td>
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<td></td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>Commune</th>
<th>I</th>
<th>II</th>
<th>III</th>
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</thead>
<tbody>
<tr>
<td>Ancona</td>
<td>100</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Florence</td>
<td>438</td>
<td>58</td>
<td>13</td>
</tr>
<tr>
<td>Prato*</td>
<td>100</td>
<td>38</td>
<td>38</td>
</tr>
<tr>
<td>Leghorn</td>
<td>160</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Perugia</td>
<td>110</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Rome</td>
<td>2,161</td>
<td>112</td>
<td>5</td>
</tr>
<tr>
<td>Naples</td>
<td>1,180</td>
<td>84</td>
<td>7</td>
</tr>
<tr>
<td>Salerno</td>
<td>118</td>
<td>7</td>
<td>6</td>
</tr>
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<td>Foggia</td>
<td>117</td>
<td>5</td>
<td>4</td>
</tr>
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<td>Bari</td>
<td>311</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td>Taranto</td>
<td>192</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Reggio</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calabria</td>
<td>150</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Palermo</td>
<td>587</td>
<td>28</td>
<td>5</td>
</tr>
<tr>
<td>Messina</td>
<td>251</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Catania</td>
<td>361</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>Cagliari</td>
<td>181</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>

I Total population of commune in 1961 in thousands.
II Persons employed in manufacturing in 1961 in thousands.
III II as a percentage of I.
* Not a province capital.

Note: Column II includes persons residing in nearby communes but working in commune under consideration, but excludes persons moving out of commune to work elsewhere.
### Appendix 6

**ITALIAN FOREIGN TRADE IN 1960**

(a) **ITALY’S PRINCIPAL TRADING PARTNERS IN 1960**

<table>
<thead>
<tr>
<th>Imports from</th>
<th>%</th>
<th>Exports to</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>West Germany</td>
<td>14·2</td>
<td>West Germany</td>
<td>16·5</td>
</tr>
<tr>
<td>U.S.A.</td>
<td>14·2</td>
<td>U.S.A.</td>
<td>10·5</td>
</tr>
<tr>
<td>France</td>
<td>8·4</td>
<td>France</td>
<td>7·5</td>
</tr>
<tr>
<td>U.K.</td>
<td>5·1</td>
<td>U.K.</td>
<td>6·9</td>
</tr>
<tr>
<td>Austria</td>
<td>3·8</td>
<td>Switzerland</td>
<td>6·7</td>
</tr>
<tr>
<td>Argentina</td>
<td>3·3</td>
<td>Austria</td>
<td>3·1</td>
</tr>
<tr>
<td>Iraq</td>
<td>3·0</td>
<td>Netherlands</td>
<td>2·9</td>
</tr>
<tr>
<td>Switzerland</td>
<td>2·9</td>
<td>Yugoslavia</td>
<td>2·9</td>
</tr>
<tr>
<td>Kuwait</td>
<td>2·6</td>
<td>Belgium–Luxembourg</td>
<td>2·6</td>
</tr>
<tr>
<td>U.S.S.R.</td>
<td>2·6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>2·6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>2·5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belgium–Luxembourg</td>
<td>2·5</td>
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</table>

(b) **PRINCIPAL ITEMS OF TRADE**

**VALUE IN THOUSANDS OF MILLIONS OF LIRE IN 1960**

*Main categories:*

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<thead>
<tr>
<th></th>
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<th>Exports</th>
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<tbody>
<tr>
<td>1 Agricultural products</td>
<td>679</td>
<td>247</td>
</tr>
<tr>
<td>2 Mineral products</td>
<td>566</td>
<td>20</td>
</tr>
<tr>
<td>3 Manufactured products</td>
<td>1,708</td>
<td>2,013</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>2,953</td>
<td>2,280</td>
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</table>
Selected items or groups of items:

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<th>Exported</th>
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<tbody>
<tr>
<td>Cereals</td>
<td>Vegetables</td>
</tr>
<tr>
<td>Raw cotton</td>
<td>Citrus fruits</td>
</tr>
<tr>
<td>Coffee</td>
<td>Other fresh fruits</td>
</tr>
<tr>
<td>Wool</td>
<td>Tinned tomatoes</td>
</tr>
<tr>
<td>Timber</td>
<td>Wines, etc.</td>
</tr>
<tr>
<td>Sawn timber</td>
<td>Textiles</td>
</tr>
<tr>
<td>Wood pulp</td>
<td>Leather footwear</td>
</tr>
<tr>
<td>Rubber</td>
<td>Rolled iron and steel</td>
</tr>
<tr>
<td>Iron ore</td>
<td>Machinery</td>
</tr>
<tr>
<td>Scrap iron and steel</td>
<td>Fertilisers</td>
</tr>
<tr>
<td>Coal</td>
<td>Oil (petroleum) products</td>
</tr>
<tr>
<td>Crude oil (petroleum)</td>
<td></td>
</tr>
<tr>
<td>Meat</td>
<td></td>
</tr>
<tr>
<td>Olive oil</td>
<td></td>
</tr>
<tr>
<td>Hides</td>
<td></td>
</tr>
<tr>
<td>Rolled iron and steel</td>
<td></td>
</tr>
<tr>
<td>Copper and its alloys</td>
<td></td>
</tr>
<tr>
<td>Machinery</td>
<td></td>
</tr>
<tr>
<td>Chemicals</td>
<td></td>
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</tbody>
</table>

Volume of selected items or groups of items in thousands of metric tons in 1960:

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<th>Exports</th>
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<td>Crude oil (petroleum)*</td>
<td>Oil (petroleum) products</td>
</tr>
<tr>
<td>Coal</td>
<td>Crude oil</td>
</tr>
<tr>
<td>Scrap metal</td>
<td>Fertilisers</td>
</tr>
<tr>
<td>Iron ore</td>
<td>Rolled iron and steel</td>
</tr>
<tr>
<td>Other non-metallic minerals</td>
<td>Vegetables</td>
</tr>
<tr>
<td>Cereals</td>
<td>Citrus fruits</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>Other fresh fruits</td>
</tr>
<tr>
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* In 1962 Italy imported 41m tons of crude oil.
Appendix 7

Location of small areas appearing in various figures in the book.
Appendix 8

THE SPELLING OF PLACE NAMES

Certain Italian place names have a widely used English version. The following have been used:

(a) PROVINCES AND THEIR PROVINCE CAPITALS

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(b) NAMES OF REGIONI

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(c) CERTAIN WIDELY KNOWN PHYSICAL FEATURES such as the Alps and Apennines have an English version. The policy has been to use the English for well known features such as these and the Italian (e.g. Monti Lattari rather than Lattarian Mountains) for less well known features.
Appendix 9

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