

Human Geography

D.C. Money

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Introduction to

HUMAN GEOGRAPHY

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Preface

This book provides a necessary link between textbooks which serve the general courses of Geography up to the "O" Level Examinations and the more specialised books and papers which must be referred to in the course of more advanced studies. Emphasis is placed upon the human aspects of Geography, from simple patterns of settlement to the geographical background to modern world problems. Its breadth of coverage will be of particular value to those reading for the General Certificate Examinations at Advanced Level and those taking Diploma Courses in Geography.

The aim is to guide the student towards an appreciation of the many ways in which man and the elements of his natural surroundings affect each other, rather than to provide a mere compendium of geographical knowledge, which would tend to dampen rather than kindle a desire to read more widely and so make use of libraries and geographical journals.

Because the field of study is necessarily wide, and the results of human activities continually changing, particular care has been taken to avoid a dogmatic approach. To this end, each chapter includes, in some detail, a number of examples taken from different parts of the world, each helping to illustrate the theme of the chapter, providing case studies, for example, of various forms of agriculture, situation and layout of villages and towns, and types of boundary problem. There is never exactly the same balance between natural and human features in any two places, no matter how strong their superficial resemblances may be; therefore we cannot say, for instance, that certain conditions *will* produce such and such a type of agriculture—or *will* cause this or that form of settlement to thrive. Thus, while the examples chosen show the relations between men and their natural environment *in the particular cases described*, they are intended to lead to the recognition of similar human-physical relationships in other parts of the world without implying that such relationships *must* exist because of specific environmental circumstances.

There *are* certain patterns of settlement, and similarities in settlement patterns in different parts of the earth's surface, which may be recognised as responses to particular economic circumstances and physical conditions. To analyse complex patterns, geographers seek to acquire quantified data, from personal surveys or secondary sources,

and use mathematical techniques to process them. They may well establish significant patterns and their causes, and be able to present these in the form of simple models and maps for geographical information and study.

Unfortunately, this laudable approach is sometimes regarded as being, in itself, "New Geography", and the techniques involved are apt to be seen as ends in themselves. Today, these are essential aids to the study of urban societies and rural-urban relationships, which are apt to be complex. But in Human Geography, which considers the nature and areal distribution of man's many activities, man must firmly be at the centre of our studies, whatever techniques are used to establish the facts.

Many of the problems of the modern world (such as those discussed in Part II) can only be seen in their true perspective if there is knowledge and appreciation of their geographical background. Such knowledge should be the property of anyone who seeks a better understanding of human relations in the world about him, and especially of the large number of students who nowadays travel widely and, at an early age, encounter many of these problems at first hand.

I would like to express my gratitude to Mr A. F. Martin, Mr C. D. Reeve, and Prof. R. W. Steel who kindly read portions of the original text during stages of preparation, and whose criticisms and suggestions were of such great value.

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FRONT JACKET PHOTO	The seas off south-western Sri Lanka teem with fish. Here lines of men laboriously haul in nets dropped off-shore by local rowing boats. The government's efforts to mechanise fishing will produce more food, but also affect the livelihood of these fishermen.					
BACK JACKET PHOTO	Beyond the relative sophistication of Paraguay's capital, Asuncion, and the river Paraguay stretches the undeveloped Chaco, with groups of Indians at a bare subsistence level.					

[Photos: D. C. Money]

PART I

CHAPTER I

MAN AND HIS ENVIRONMENT

In Human Geography we seek to examine those facts of geography which relate directly to Man and his activities, observing both their effects upon him and the results of his own impact on his surroundings. It soon becomes apparent that such geographical facts and their effects on man are virtually innumerable, and even in the smallest area occupied by man they are interwoven with his activities in a great variety of ways.

To understand the full relationship between man and the region in which he lives, we should properly take into account every single part of his environment; for if one single element is altered in any way it may set up a chain of events which will ultimately affect all the others.

Consider, for instance, the possible consequences of deforestation. An indiscriminate destruction of forest cover by get-rich-quick lumbering, without subsequent reafforestation, has taken place in many parts of the world, and has produced striking results (cf. Chapter X) and repercussions which have been far from local. The lack of protective vegetation means that the ground becomes exposed to wind and rain, and the soil cover may be removed. The rain now runs off the land more quickly, so that, with rapid evaporation, the result may be that not enough sinks into the ground to maintain the water-level. Plants, other than the deep-rooted, may perish, and the animals which feed on them migrate. The water-supply of settlements on the same strata, though far removed from the despoiled areas, may similarly suffer, with direct effect upon human occupation. Link by link the chain of effects may extend throughout the region.

Even in a small area, so many factors must be considered that only by making a piecemeal study of very many single environmental elements, or of groups of elements, is it possible, ultimately, to obtain a broad view of the overall effect of environment upon man, or to predict the possible consequences of certain actions on the part of man.

Man is the central figure in Human Geography, and therefore, perhaps, we should first observe the facts of his occupation of the earth's surface—how and where he lives. These are, however, considered in some detail in the chapters which follow, and it is convenient

first to draw attention to the ways in which various natural phenomena affect mankind. Such phenomena do not affect man singly but as part of his general environment, and although countless others have some influence, however remote, upon his activities, we cannot hope even to list, let alone appreciate, them all; many will come to light during

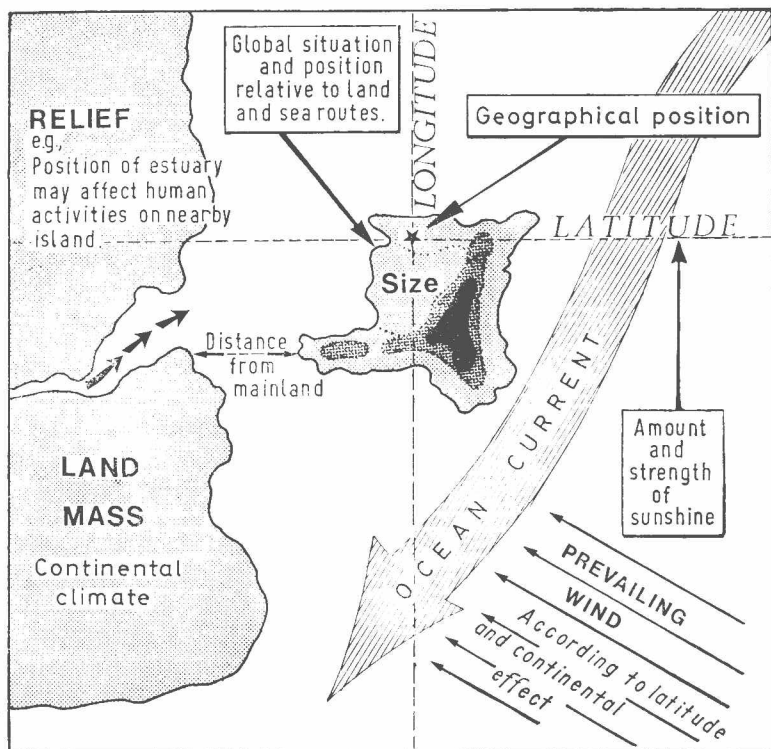


Fig. 1. Some elements of the natural environment which are closely connected with the geographical position of a place and with its situation relative to other land and sea areas. In this case the area considered is a small island whose cross-section is shown in Fig. 2.

further reading, and the effects of others must be left to the reader's own experience, observations, and perhaps, quantitative investigation, for the collection and analysis of relevant data may enable one to evaluate the significance of various influential factors.

Characteristics of a Natural Region

Consider first those facts which together give a natural region its particular characteristics; for, despite the modifications man may make, such is his background. Three general facts have great bearing on the character of any region: (a) *Latitude*; (b) *Relief and Structure*; (c) *Situation relative to an ocean or land mass*. Figs. 1 and 2 show that the individual elements connected with these three facts might combine to create small natural regions within the limits of an imaginary island.

On their interactions depend the types of climate and vegetation. The direction of the prevailing wind in any *latitude*, in conjunction

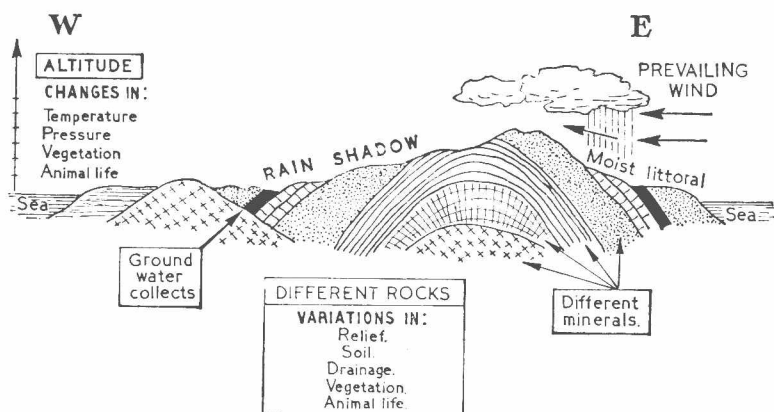


Fig. 2. Elements of the natural environment which closely depend on relief and structure, illustrated by a cross-section of the island shown in Fig. 1.

with a *maritime or continental location*, for instance, affects the rainfall, temperature, and consequently the vegetation, of a region.

Relief, besides influencing the type and amount of rainfall, may be a prime factor in forming an isolated climatic region. The “continental” nature of the extremes of climate occurring in the Po Valley and the Hungarian Plain, in contrast to their surrounding areas, is caused partly by the relief—in each case, an enclosed plain surrounded by mountains of sufficient height to diminish maritime influences.

The *structure* and nature of the underlying rocks affects the soil, the drainage, and, of course, the relief itself. In these rocks may lie untapped minerals whose exploitation by man may alter considerably

the appearance of the region itself. Clay, gravel, and limestone, for construction; coal, petroleum, and metal ores, for power and industrial development; these and much besides may lie passive, with little noticeable influence upon the region. Through man, the active agent, they become significant.

The mention of exploitation has brought man once more into the scene. His stage is the region, whose broad setting and individual characteristics deeply influence his activities, often in surprisingly indirect ways. The influence of some of the natural features are examined below. Man himself brings about modifications, and uses the elements of his environment to his own advantage in accordance with his capabilities.

SOME NATURAL ELEMENTS AND HOW THEY AFFECT MAN

Climate.—The climate as a whole plays the principal part in sustaining various types of vegetation, which adapt themselves to the prevailing conditions. Human groups cultivate crops suited climatically to their region: dates in the desert oases, wheat on the temperate grasslands, rice in the monsoon and equatorial lands. Here, however, man's selective powers may come into play, so that climate by no means entirely decides crop distribution, for the most important crops grown in a given region are not necessarily indigenous, nor those best suited climatically. Where many crops could thrive, economic considerations may cause one of them to predominate; witness the concentration on the growth of maize in the Corn Belt of the U.S.A.

Climate directly influences the type of house man builds, the clothes he wears, his mode of transport—whether it be sled, wheeled vehicle, or camel train. So many and so varied are the effects of climate that it will be clearer to outline the influences of its individual elements, leaving to later chapters the more specific examples of their effects upon soil, settlements, and communications.

Temperature. The balance of the natural vegetation is closely related to the temperature regime and individual plant species to precise upper and lower temperature limits. Extremes of temperature directly affect man. Within certain limits the body is able to adjust itself to such extremes; but, even though we create our own local climate, by living in a heated house, or by the use of fans and ice, the hottest and coldest regions of the earth remain distinctly unfavourable for permanent residence.

The physiological effect of air at varying temperatures depends on other weather conditions especially the humidity. Moist equatorial lowlands are more enervating than dry savannahs, though their absolute

maximum temperatures and daily ranges are far lower; even a moderately high temperature can be uncomfortable if the humidity is high, and experienced over a long period is debilitating.

In the cooler parts of the middle latitudes, the outdoor temperatures seem to suit mankind well and to provide enough variation to act as a stimulus. But it is within man to respond to all types of climate by making suitable adjustments: with improved types of building and clothing, civilisation has steadily advanced into the colder lands, and this poleward movement of settlers is still continuing. In the extremes of heat, the Indian peasant responds by adjusting his hours of labour to the cooler parts of the day, and in the hot season is on his way to the fields before dawn, taking his rest as the sun climbs overhead.

Extremes of cold or of dry heat are often fatal to plants, particularly at the time of flowering. Frost is a major factor in the control of crop distribution, but like so many natural occurrences it is not wholly adverse in effect. It helps to break up the soil for spring sowing, and kills, or renders dormant, harmful bacteria at a time when human resistance to disease may be low.

Atmospheric Pressure. At altitudes where the pressure and oxygen supply for respiration are much lower than the average there are very noticeable physiological effects, particularly on those unaccustomed to living at heights. Sickness occurs at first, but in a matter of days adjustments take place within the body. With long residence, as in the high settlements of the Andes, human beings not only become accustomed to the conditions but develop increased lung capacity, and a high concentration of haemoglobin in the blood.

The lower density of the air at higher altitudes means that radiant heat is more readily received and lost, thus causing considerable diurnal range of temperature. For this reason, in settlements on the high Tibetan Plateau it may be pleasantly warm in the sunlight but literally freezing in the shade.

Changes in atmospheric pressure are responsible for air movement and we may consider wind separately.

Wind. The influence of wind is felt chiefly through its physical violence and by its promotion of rapid evaporation. Plant growth may be inhibited by a strong prevailing wind; while damage to crops and property is frequently caused by hurricanes at places in very different latitudes. Within a single year, 1951-2, Jamaica, the Orkney Islands, parts of the Philippines, and Arkansas, suffered devastating losses relative to the area affected; and in 1953 gale-force winds in conjunction with high tides caused disastrous flooding in England and the Netherlands.

Wind is a prime factor in causing soil erosion (Chapter X). The drying effect loosens the top soil into a dust which is borne away by the wind itself. Wind-borne particles can also be highly erosive; yet the deposition of wind-borne material, as loess, has produced some of the world's most fertile areas. On the other hand, shifting dunes have overwhelmed men's works in both desert and coastal regions.

The winds, which once strongly influenced the path of the shipping routes, and must still today be reckoned with by vessels large and small, have also a measurable influence upon air travel, and on the siting of airfields.

Humidity. The physiological effect has been briefly mentioned in connection with temperature. Thus a day is "raw", rather than merely cold, when the humidity is high and the temperature low; it is "muggy", rather than hot, when the humidity and temperature are both high.

Sweat evaporates rapidly in those hot regions where the air is very dry. If man sweats freely, he may lose a large quantity of salt, which, if not replaced, may cause heat cramps; although if man works in such conditions over a long period adjustments are made by the body, controlling to some degree the quantity of salt lost.

When the air is nearly saturated with water vapour, evaporation is greatly reduced, so that the body is not cooled by sweating. Men find it difficult to concentrate and, finally, if the air temperature is near body temperature, may suffer from heat stroke.

Many plants flourish in a warm humid atmosphere; so do minute organisms, and bacteria which act on plants and animals multiply rapidly. The humidity of the air controls the rate of evaporation, and so exerts a powerful influence upon plant distribution; for when the air is humid the soil can retain its moisture, whereas a dry wind soon dries out the top soil. A succession of drying winds can render vegetation, in such regions as south-east Australia, particularly liable to forest fires.

A high humidity is desirable in certain industries, for instance, in cotton spinning, where dry threads are apt to break. In some large-scale confectionery processes it is essential to know the exact humidity before allowing crystallisation to begin.

Precipitation. The pattern of the world's natural regions follows the rainfall distribution very closely, for the distribution of plants and animals is closely related to the regional regimes of precipitation and evaporation.

The seasonal distribution sets the rhythm of the agricultural year and brings many other responses from man, many of which are considered in subsequent chapters. In the Mediterranean and monsoon

regions, for instance, and wherever long dry spells are followed by rain, the most stringent action is required to conserve water and to guard against soil erosion.

Erratic rainfall also brings problems which, because they are unpredictable, may cause distress to mankind. Over the greater part of the occupied territory of Australia a long drought occurs, on the average, more than once in every five years. This includes much of the agricultural land of the Murray-Darling Basin, where serious drought is frequently followed by flooding. Here is another of those phenomena

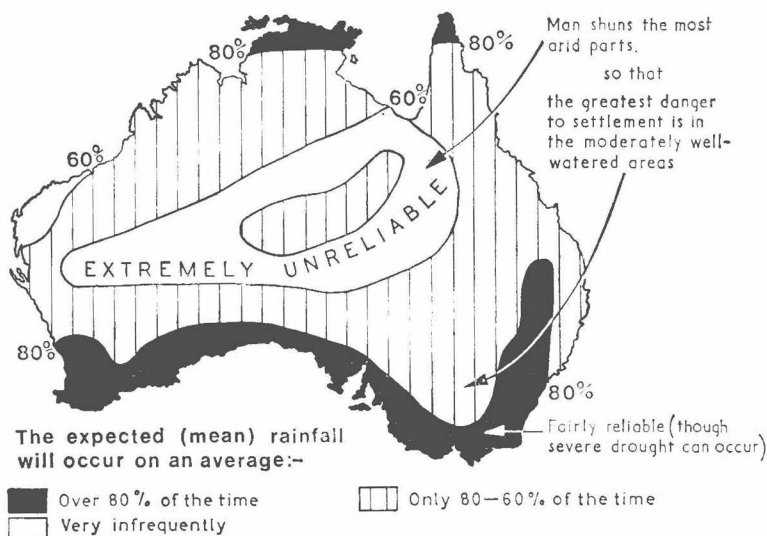


Fig. 3. THE UNRELIABILITY OF RAINFALL IN AUSTRALIA.

The greatest dangers to human settlement, with the threat of large-scale destruction of crops or animals, are in those areas where sufficient rain falls to encourage agricultural development yet where absolute drought or excessive flooding occurs from time to time.

which produce contrary results, for while flood-waters may destroy standing crops, in the long term the reduction in the number of rabbits, by drowning, may well benefit future crops.

It is not in the exceptionally dry areas that man suffers most from unreliable rainfall, for there he is usually dependent on some form of irrigation. It is in closely-settled border zones between the dry and the well-watered lands where the dangers mostly exist, as in Western Bengal where disastrous famines may follow a few weeks' delay in the monsoon rains.

The effects of excessive rainfall or snowfall need little elaboration. Crops are affected according to their state of development, communications and power supply are hindered, and buildings damaged. In some areas, like the great deltas of south-east Asia, natural periodic flooding deposits alluvium, and thus renews the fertility of the land.

Hail, occurring chiefly as a result of intense convection, is likely to be most frequent in the summer months, so that the damage to standing crops is often considerable, and can take place in a short space of time. In Colorado, U.S.A., farmers are unwilling to risk all on wheat, which is especially vulnerable to hail, and often plant beet or maize as well; though the return from a good crop of wheat may be considerably higher.

“Hail can kill a county full of wheat in half-an-hour. If hail could be abolished, there would be no beets or corn (*i.e.* maize) in Colorado.” (John Gunther, *Inside U.S.A.*)

The Climograph. In order to appreciate the relative influence of climatic factors in combination, a climograph may be used.

A climograph of relative humidity against temperature may be plotted representing these conditions for each of the months of the year; these points are joined by a line. The area enclosed by the plot then occupies a position on the graph which indicates, more clearly than a single temperature or rainfall chart, the physiological effects of climate.

Monthly rainfall and temperature figures are usually more readily available, and it is instructive to select and plot figures for representative towns in the major climatic regions. Strictly, such plots of rainfall and temperature are termed *hythergraphs*.

Structure and Relief.—So closely is man's occupation related to the geology of the region in which he lives that here we will simply note a few of the more obvious relations between the relief and structure of a region and its inhabitants; for, again, these and other relations are mentioned more spontaneously, and in greater detail, at intervals throughout the book.

Relief. The features of relief depend upon the parent rocks and their formation, upon earth movements, and subsequent modelling by the agents of weathering and erosion. Some instances of the effect of relief are:—

(i) Modifications imposed upon climatic elements by a relief barrier, such as a rain-shadow effect, or variations in altitude, where the decrease of temperature, pressure, and available oxygen with height is reflected in modified forms of plant and animal life.

(ii) The proportion of highland to lowland and the degree of slope have a strong influence on rural settlement, and the suitability of a region for certain types of agriculture may largely depend on these facts. Plains, in contrast to mountain areas, tend to be more densely settled, for physically they are easier to cultivate and their soils usually deeper and more fertile.

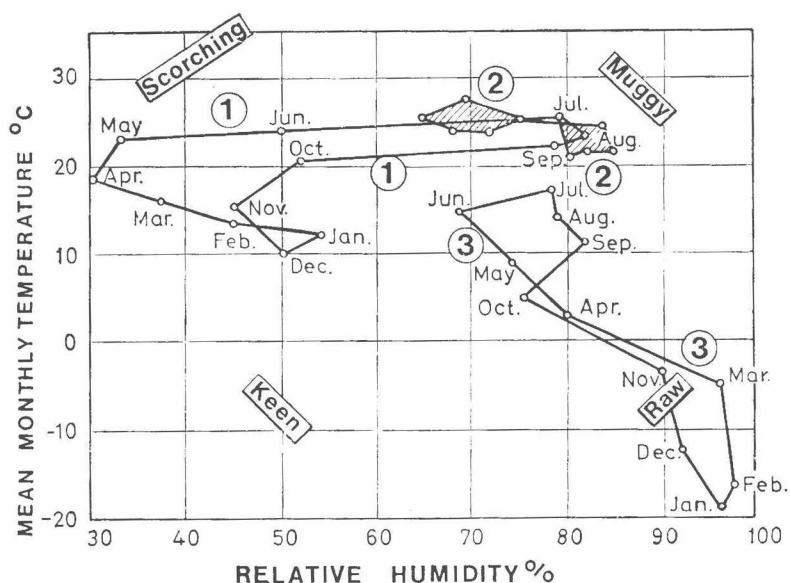


Fig. 4. A CLIMOGRAPH (after Griffith Taylor).

Plot (1). Jhansi, India. This shows the change from winter drought to the heavy, humid, monsoon period (June to October).

Plot (2). Madras. A high temperature is maintained in this city which lies at sea-level in a low latitude. Moisture is brought both by the south-west monsoon and by the north-east winds (from November to March).

Plot (3). Winnipeg. This plot shows the extremes of temperature in the interior of Canada, and also the high relative humidity of the cold air.

(iii) The creation of drainage and river systems, with all they mean to man.

(iv) Tactical relief features which may provide sites for defence or, conversely, give ease of access to an invader.

(v) The aspect, or lie of the land, in relation to sun and wind. In temperate latitudes, for instance, man usually chooses the sunny slopes for settlement or cultivation, or chooses to live leeward of a hill.