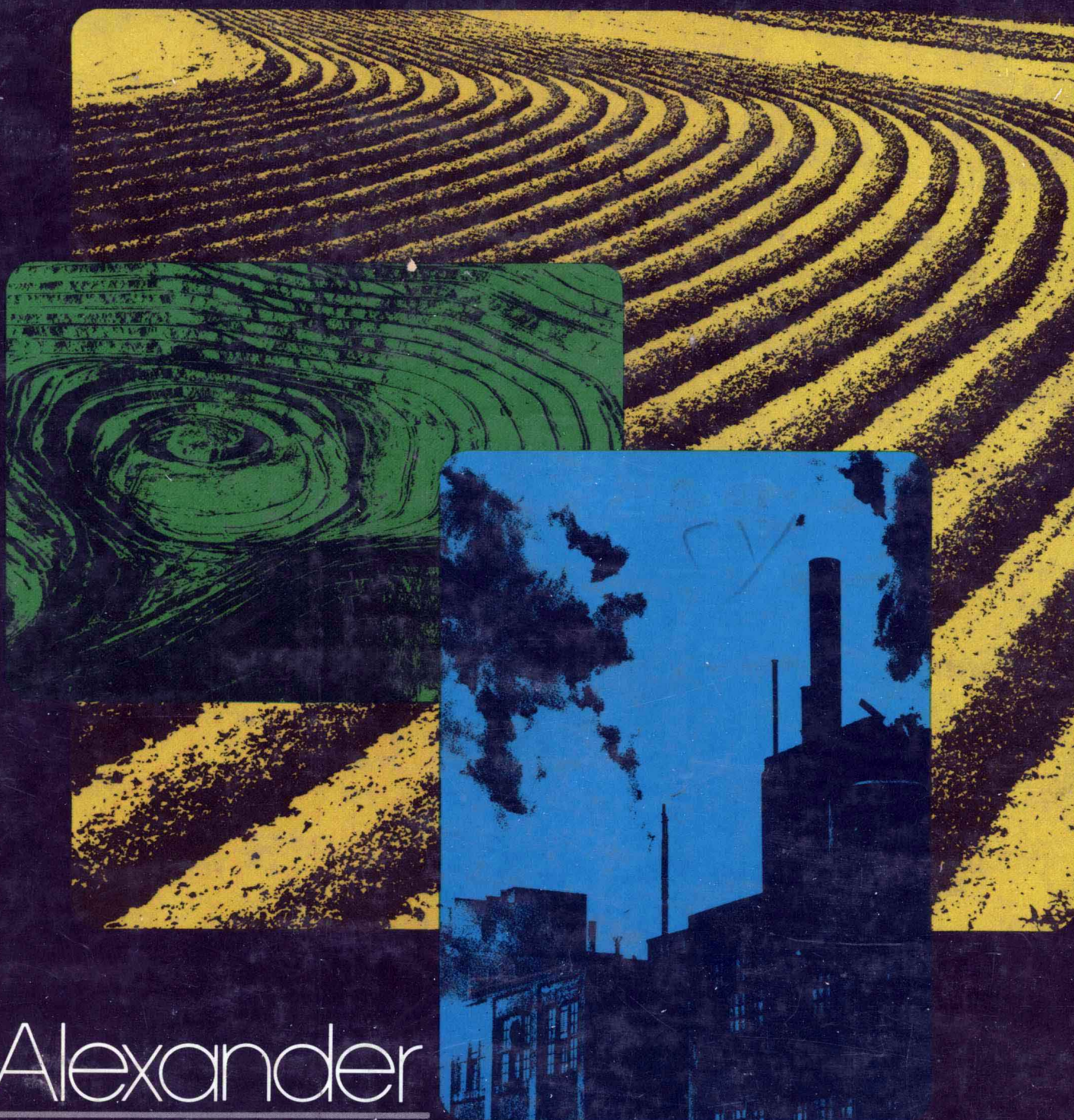


# ECONOMIC GEOGRAPHY

SECOND EDITION



Alexander  
Gibson



# GEOGRAPHY

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John W. Alexander and Lay James Gibson

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# PREFACE TO THE SECOND EDITION

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The field of economic geography has grown a great deal since *Economic Geography* appeared in 1963. The first edition was written to span the gap between the traditional and "new approaches" to geography. The use of statistical methods of analysis is no longer new to professional geographers but it is still often foreign territory to the beginning student. The second edition of *Economic Geography*, therefore, is still a "bridge" textbook—one that will take the student through the broad range of material that is covered by the field of economic geography and then introduce him or her to a number of different methods used to describe and analyze the spatial patterns that have been identified.

In terms of organization, the second edition is similar to the first. Those familiar with the original edition will notice that the two chapters that focus on manufacturing regions outside of Anglo-America have been dropped. Some of the more important points and information from these chapters have been added to the topical discussions found in earlier chapters. In most other respects the second edition follows the first.

Wherever appropriate new material has been added, tables have been updated, and generalizations have been restated to reflect contemporary patterns. Perhaps one of the strongest features of the first edition was the wide use of maps to illustrate the patterns analyzed in the text. This feature has been retained. There are over 225 line drawings, a large share of which have been revised and redrafted.

A number of people have contributed to the making of the second edition but three who can be credited with exceptional effort are Steven Meyer, who took on the awesome task of map making, and Joan McLellan and Clair Shenk, who took

time from their graduate studies to comment on the manuscript, help with the selection of illustrations, and generally keep the revision on track. Similarly, support on the home front was an essential ingredient in the revision process and for this, thanks go to Janet, Stephen, and Jim.

Finally, we would like to reiterate a request. We desire the suggestions of any reader for improving this book—suggestions for clarifying ideas, organization, and presentation, suggestions for giving illustrations a stronger role. We would also appreciate having any errors of fact brought to our attention.

*John W. Alexander*

*Lay James Gibson*

## PREFACE TO THE FIRST EDITION

---

In writing this text, I have adopted a deliberate strategy. Geography, like most disciplines, is going through a transition period in which increasing attention is being given to quantification and the use of statistical methods of analysis. The reaction of geographers has been varied. Consequently, it seemed to me that there was a need for a "bridge" textbook, one to span the gap between the traditional and new approaches to geography. Accordingly, the early portion—in fact, most—of this text conforms to traditional geographic methods. The chapters have been deliberately structured around three basic geographic questions that apply to all economic activities, the questions of location, characteristics, and relationships. After this method is introduced, attention is directed to individual types of endeavor, moving through the sequence of primary, secondary, and tertiary economic activities. The later chapters weave in, very gradually at first, some of the "new geography," until finally, in Part Nine, statistical methodology is the main subject matter. By being introduced slowly and gradually to statistical concepts, even the student with little mathematical background may find it easy to glide into an understanding of these ideas. In a phrase, I have adopted the strategy of the soft sell. I trust that my educational engineering is sound, and that this bridge proves to be useful and sturdy.

Many scholars and friends have had a role, either direct or indirect, in the making of this book. First, I owe a general debt to teachers who have stimulated my interest and understanding of the field: to Harland James, high school teacher in Urbana, Illinois; to W. O. Blanchard, my undergraduate mentor at the University of Illinois; and to Vernor C. Finch, Glenn Trewartha, and Richard Hartshorne, under whom I took graduate work at the University of Wisconsin. I must acknowl-

edge, too, Clarence F. Jones, of Northwestern University, whose concept of economic geography has strongly influenced my thinking.

Second, my thanks to colleagues. Any strong points in this textbook are attributable, at least in part, to my fellow geographers at the University of Wisconsin. I am grateful to: Arthur Robinson, for interesting me in statistical techniques; Andrew Clark, for showing me the value of historical geography (See Chapter 15); Henry Sterling, for information (and a photograph) on primitive cultivation; Kirk Stone, for information (and photographs) on Scandinavia; Clarence Olmstead, for reading a portion of the manuscript and teaching me a lot on the geography of agriculture; John Hidore, for permission to use two maps in Chapter 31; and Edwin Hammond, Fred Simoons, Robert Finley, and Karl Butzer, for stimulating my thinking in many ways. I shall happily share with them credit for any strengths in this textbook; but, needless to say, the reverse does not hold—I cannot share with them blame for any flaws.

I owe a great debt to Randall Sale who designed and directed the production of most of the maps, which were drawn in the University of Wisconsin Cartographic Laboratory, principally by Miss Mei-Ling Hsu, Rodney Helgeland, and George McCleary. Special thanks, too, to Robert Taafe of Indiana University, who made numerous constructive comments on the Soviet Union section of Chapter 25.

There is insufficient space here to express appreciation individually to fellow economic geographers at other institutions upon whose ideas, maps, and photographs I have drawn in the pages to follow. Due credit is given them with quotations and illustrations. Several of my graduate students have helped by constructing maps, contributing ideas, and commenting on the manuscript, particularly Tom McKnight, William Wallace, George Stevens, Kenneth Martin, Roy Officer, Richard Hough, James Lindberg, and George McCleary. The United States Census authorities graciously made available numerous maps. Most of the burden of typing the manuscript and the mass of correspondence pertaining to this book has been cheerfully and neatly executed by Mary Jane Johnson and Judy Christenson. My wife, Betty, has graciously and patiently endured those exigencies of life associated with a husband's ups and downs in trying to haul a book over the long road from preliminary planning to final publication. And I gratefully acknowledge the patience, criticism, and suggestions of my editor, Ronald Nelson.

Finally, a request: I desire the suggestions of any reader for improving this book—suggestions for clarifying ideas, organization, and presentation, suggestions for giving maps, photographs, and other illustrations a stronger role. I would appreciate, too, having my attention called to any errors of fact alert readers might detect.

*John W. Alexander*

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# PART ONE

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## INTRODUCTION

Economic geography : What is it? Many people have at least a vague idea of the meaning of the term *economic*. They know that it pertains to farming and fishing, incomes and expenses, transportation and taxes, and a good deal else that is somehow related to money. And most people likewise have some notion of what geography means. But here opinions vary sharply. Some think it merely involves the memorization of place names, whereas others regard it as a twin sister of geology. Clearly, then, because of this prevalent vagueness and confusion, before we can pin down the concept of *economic geography* we should find out what each of the component words means.

This will be precisely our first task in Chapter 1. Then, after fixing our definitions, we can go on to a consideration of the distinctive method of economic geography. As we shall see, it involves three basic questions, which deal with the locations, characteristics, and relationships of economic activities.

We shall first apply this geographic method of analysis in Chapter 2 to population—for people are the fundamental subject matter of the economic geographer. Then we shall use the method to approach the principal economic activities in which the people of the world are engaged.

We shall give attention first to subsistence economic activities (Part Two) and then to commercial activities (Parts Three to Eight), treating the latter in the following sequence: commercial gathering, commercial agriculture (or bioculture), mining, manufacturing, transportation, and services (or tertiary activity). Finally, in Part Nine (Chapters 29 to 31) we shall take up measurements and geographic theory as applied to economic endeavors.

Early chapters are structured explicitly around the three basic questions in order that the reader may become familiar with the method of geographic analysis as well as with content material. In these early chapters, geographical relationships are usually approached in terms of the pairs of physical and cultural phenomena or of intraregional and extraregional phenomena, the reason being that information now available in the geographic literature makes these approaches more feasible for these topics.

Later chapters will be different in that usage of the three basic questions will be more implicit than explicit (for by this time they will have become second nature to the reader). Another difference is that later chapters will weave in certain aspects of correlation analysis. This topic is reserved for later stages of the book because it is more difficult to grasp, and has been used mostly by researchers in producing information which deals with topics covered in Parts Six, Seven, and Eight.

The names of many nations and of other places will be mentioned in the chapters to follow. Therefore, every reader should own an atlas, an indispensable tool for mastering the material of geography as well as for comprehending world affairs. Among the best atlases for economic geography are *The Oxford Economic Atlas of the World*; *The Oxford Regional Economic Atlas, The United States and Canada*; *The Oxford Regional Economic Atlas, Western Europe*; *Man's Domain, A Thematic Atlas of the World*; *The National Atlas of The United States of America*; and *Goode's World Atlas*. In addition, it would often be helpful to procure blank maps at a bookstore to make notations about places and areas discussed in the text.



# CHAPTER

# 1

## **economic geography: meaning and method**

Primary production. The Morenci open-pit mine in Arizona, the second-largest copper pit in the United States, has its ore removed by rail. The mine is the most significant employer in the remote east central part of the state. (*Courtesy Phelps Dodge Corporation.*)



## THE MEANING OF ECONOMIC

The word *economic* pertains to all the activities that men engage in the world over in the production, exchange, and consumption of items of value. Anything man will pay money for, or will barter, or will work to produce is an economic item.

### Production

In the *production* of economic items, men busy themselves in a wide range of pursuits that can be classified primary, secondary, and tertiary (see Table 1-1). *Primary production* includes the age-old activities involved in withdrawing objects of value from nature's storehouse and in collaborating with nature to increase the generation and proliferation of items that are available in their "wild" state. For example, in agriculture, man harvests crops from the soil; in mining, he harvests ores from the earth's crust; in fishing, he harvests animals from the rivers, lakes, and oceans; in forestry, he harvests trees from the wooded areas of the earth.

In *secondary production* man increases the value (that is, the utility) of an already existing item by changing its *form*. Such activity is called manufacturing. The miller, for instance, changes grains of wheat into a more usable product, flour. Steelmakers turn iron ore into a more durable metal in blast furnaces and steel mills.

In *tertiary production* man does not harvest substances from nature, nor does he upgrade their worth by changing their form. Rather, he renders services that are of value to his fellows. Repairmen hammer the dents out of automobile fenders. Teachers impart knowledge and try to stimulate thought. Government employees enforce laws, collect taxes, and maintain highways. Other services are rendered by musicians, lawyers, doctors, real estate people, bankers, and housekeepers. It would, of course, be possible to use more terms to categorize production activities than we have employed here. Terms such as "quaternary sector" and "quinary sector" are sometimes used—usually to refer to specific activities which we have included in the tertiary sector. Unfortunately, however, these terms are used in different ways by different people, so for the sake of clarity we will

Table 1-1

### Classification of Economic Activities

A. Production	
1. Primary	Harvesting commodities from nature (agriculture, forestry, fishing, mining)
2. Secondary	Increasing the value of commodities by changing their form (manufacturing)
3. Tertiary	Performing services (repair, banking, teaching, entertainment, etc.)
B. Exchange	
1. Location	a. Increasing the value of commodities by changing their location (freight transportation) b. Satisfying the needs of people by changing their location (passenger transportation)
2. Ownership	Increasing the value of commodities by changing their ownership (wholesale and retail trade)
C. Consumption	
Use of commodities and services by human beings to satisfy their desires.	

adhere to the terms and definitions that are given in Table 1-1.

### Exchange

The *exchange* of items of value (whether the result of primary, secondary, or tertiary production) may be accomplished through *freight transportation*, which increases the value of commodities by changing their *location*. Iron ore, for example, is worth more in Chicago than in Hibbing; wheat is more valuable in Buffalo than in Saskatchewan. Changing the location of people



Secondary production. The mile-long Volkswagen plant in Wolfsburg, Germany. This single factory produces 4850 passenger cars each working day. (Courtesy German Information Center.)

Tertiary production. In the heart of such metropolitan areas as New York, retail and wholesale trade, banking, government administration, and many other tertiary services become concentrated. The two 1350 foot buildings of the World Trade Center in lower Manhattan represent a tremendous concentration of tertiary activity, accommodating exporters, importers, customs brokers, freight forwarders, manufacturers, international banks, government agencies, and a wide range of additional services essential to international trade. This section of the city also contains Wall Street, the stock brokerage center of the U.S. (Courtesy The Port Authority of New York and New Jersey.)



themselves, through *passenger transportation*, is another activity which man rates highly. Still another way to increase the value of a commodity is by change of *ownership*. This is the purpose of wholesale trade and retail trade. A radio is worth more to a distributor than to its manufacturer, and its value continues to increase as it passes from distributor to retailer and from retailer to ultimate consumer.

### Consumption

The final stage in the *economic* sequence is the *consumption* of goods and services. Until recently, the geography of consumption has been largely ignored by geographers. Today there is a relatively small but growing literature which deals with both the patterns of consumption and the spatial aspects of consumer behavior.

The term *consumption* refers to the final or direct use of goods and services to satisfy the wants and needs of human beings. Some forms of consumption destroy goods quickly—eating food or burning coal, for instance. Other forms use up a commodity slowly, bringing about its gradual depreciation—wearing a suit of clothes or driving a car. Still other forms of consumption do not destroy the commodity at all—gazing at the Alps or skiing down the snowy slopes. Occasionally, indeed, consumption may actually increase the worth of an object, as in enjoying an antique table or a Rembrandt painting.

Now, all these economic activities are studied by economists, historians, and several other social scientists, as well as by geographers. Just how does geography differ from these other disciplines in the study of economic activity? A partial answer can be found in the meaning of *geography* itself.

### THE MEANING OF GEOGRAPHY

First of all, there are three widely held false notions of geography that should be dispensed with in order to

clear the air for a definition of what geography really is.

A good many people seem to think that geography is simply a matter of *place names*: to them, a geographer is a person who knows the location of county seats, state capitals, rivers, and seas. When a contestant on a quiz program announces that he is an “expert” on geography, he is invariably asked a series of questions that involve nothing but place names.

Other people have the idea that geography is the study of the *natural environment*. To them, the geography of Illinois would deal only with climate, topography, drainage, natural vegetation, soil, and minerals. In this view geography is nothing more than a medley of excerpts from geology, meteorology, and biology. Indeed, some people may think that geography and geology are inseparable. They cannot understand why a geographer should be interested primarily in such things as the manufacture of flour or the circulation of newspapers. The trouble with this concept is that it omits man and all his doings. A geographer who sets about to interview factory managers in a city-wide study is likely to encounter surprise. If he were an economist or a historian, they would not be astonished, for they expect economists and historians to study manufacturing. But when he identifies himself as a geographer, they ask, “What is the connection between geography and manufacturing?”

Still a third group believes that geography is the study of the *influence of the natural environment on man's activities*. *Environmentalism* is the term applied to this still widely held concept. At one time, indeed, it was the prevailing notion among many American geographers themselves. But many of them have now concluded that it covers only *part* of geography and that by itself it may lead to false conclusions. Admittedly, natural environments set certain limits on what man can do; but, as we shall learn, two regions with similar environments may have dissimilar economies because their cultures are different.

These three concepts of geography are deeply



ingrained in the minds of many people. Perhaps the reader will have to make an effort to shake off these old and unacceptable notions in favor of the new and expanded concept of geography about to be presented.

The word geography comes from two Greek roots, *geo*, which means earth, and *graphos*, which means description. The meaning would seem to be simple and clear. But many scholarly disciplines “describe the earth,” for instance, geology, pedology, botany, zoology—and meteorology. Surely geography cannot claim to be the sum total of all earth sciences. In fact, the hallmark of geography is not so much *what* it studies as *how* it studies. Geography is unique because of the perspective from which its practitioners study the earth.

### Analogy with History

In many respects, geography is similar to history. There would be no history if human events were invariable from day to day; it is because of variation through time that the discipline of history is possible. Because of *temporal* variations, the historian can identify *periods*, such as the Elizabethan Period, the Middle Ages, the Atomic Era. A scholar primarily interested in military developments can break down the record into successive ages of armed conflict and strategy. If his main concern is with the manner in which people express themselves, he can identify various cultural periods, such as the Renaissance or the Victorian. Regardless of the historian’s predilection, then, the fundamental fact that phenomena differ from one time to another enables him to distinguish chronological periods.

But this is only the beginning. The historian’s main objective is to understand *relationships* between events. He wants to know how an incident in 1914 is related to other events that took place in that year, in subsequent years, and in earlier years.

The geographer is primarily concerned with variation *from place to place*, rather than from time to time. And he is bent on understanding relationships among places. There would be no geography if physical and human phenomena were distributed uniformly over the face of the earth. But rainfall, elevation, temperature, population, farming, mining, and manufacturing do vary markedly from one location to another. Any phenomena that differ from place to place are termed *spatial variables* and qualify as the *elements of geography*.

### Definition of Geography

It is at present impossible to formulate a definition of geography that is both complete and simple—and that all geographers will accept. Nevertheless, beginning students are entitled to some declaration of position on the field. To that end, the following definition is proposed: *Geography is the study of spatial variation on the earth’s surface*. “Earth’s surface” is construed rather broadly

here to refer to the milieu in which human life exists—the lower portion of the *atmosphere*, which man breathes, the outer part of the *lithosphere*, upon which he walks and from which he extracts minerals, and the *hydrosphere*, through which he sails and from which he withdraws fish and other aquatic substances.

*Spatial variation*, like temporal variation, has profound significance for human life and underlies many of the problems facing nations, states, cities, farms, factories, families, and individuals. The historian, we saw, deals in temporal variables, discerns distinct periods, and seeks to discover temporal relationships. In like manner, the geographer deals in spatial variables, identifies regions or areas, and searches for relationships among variables of location, or place. Thus, a more complete definition of geography would be: the discipline that *analyzes spatial variation in terms of areas (regions) and relationships among spatial variables*. Other definitions embodying the same concept are: *the study of places*, and *the analysis of areal (regional) variation*.

Unfortunately, the word geography itself does not connote accurately any of these concepts. Perhaps a better name for the discipline just described might be *spatial science* or *areal science*. Still, despite its limitations, geography remains the common term, so we shall retain it here.

## THE METHOD OF ECONOMIC GEOGRAPHY

Now, we are in a position to answer our original question: What is economic geography? By blending our definitions of the two constituent terms we can derive this statement: *Economic geography is the study of areal variation on the earth’s surface in man’s activities related to producing, exchanging, and consuming wealth*.

In pursuit of that goal the economic geographer asks three basic questions. As we present these questions in the following paragraphs, consider how they compare with the basic questions asked by economists, historians, and other scholars.

### Question 1:

Where Is the Economic Activity Located?

The fundamental geographic fact is *location*. If someone wants to investigate corn farming, he begins by asking: Where is corn being farmed? The best way to find out is to inspect a map, because maps provide the clearest and quickest answers to the question “where?” Perhaps an agricultural economist or a corn specialist has already produced a “corn map,” such as Figure 1-1, which shows the location of corn production in the United States. If no such map exists, the geographer will have to construct one for himself. In any case, maps are his basic tools and are essential to his ultimate understanding of areal relationships.

The idea of *pattern*, or *distribution*, may facilitate our grasp of the concept of location. A pattern for us is the