GEOGRAPHY AND ECONOMIC THEORY

ADDRESS TO THE GEOGRAPHICAL ASSOCIATION
BY SIR JOSIAH C. STAMP, PRESIDENT, 1936.

IF the majority of my listeners are interested in geography as a subject to be expounded educationally, they must welcome every approach to it which may add to its effective rationalisation and bond it into the main structure of knowledge. This is not a mere teaching device, for it may make teaching more difficult, if it is to make it more effective. It makes teaching more difficult if we have to go beyond the immediate neighbour in causation, to reach basic causation, and fundamental reasons. To explain a geographical condition by an economic condition is immediate, but not fundamental. Some theory of economic action is implied, though it may be conveniently left unexamined and unexpressed—taken for granted. All such single economic-geographic couplets of facts taken together must ultimately conform to some theoretic principle, and have some common thread. If they do *not*, then there is no uniformity of causation and no economic, still less geographical, science. An economic explanation of a geographic fact is then no " explanation " at all. I address myself, therefore, with much personal misgiving, to the question of the kind of theory which geography may involve, or which may aid geographic understanding, and help to make geography, already culturally basic to so many mental disciplines, a fully rounded science.

Geography in recent decades has multiplied its descriptive classification or titles in a rather opportunist manner. Under the general heading of " Geography " in a University Calendar, we find " general regional," " commercial," " historical," " political," " physical," and " railway." The latest encyclopædia gives us " cultural," " human," and " economic." No one bothers much about keeping or marking the boundaries—they seem to be sufficiently well understood. And yet at the outset I find some uncertainty as to the true scope and purpose of " economic geography." Economic history is certainly not the history of economics, but quite clearly the selection of those facts in history which are of economic importance, or which can be accounted for only by economic tendencies and principles. But I am not sure whether economic geography is confined to describing the geographical aspects of physical and spatial facts which are of interest to the economist, providing him, so to speak, the bricks to build with, but quite indifferent to the use he makes of them. If so, how far does the economist really use them ? To what extent in constructing an edifice of economic principle does he rely on geographical material ? To what extent does he overhaul and recast principles to cover the wealth of material, with differences and similarities, which the economic geographer continually presents to him ? How far does he merely use this material by selection, to illustrate his

point, or does he feel a responsibility for subsuming and accounting for the *whole* of it? Or am I an idealist? Is a geographical fact *ever* the awkward fact that kills the happy economic theory in the well-known definition of tragedy? But perhaps the economic geographer thinks it is his own task to account for facts, for the presence or absence of features, for similarities and differences, by applying economic principles and tests. Perhaps he learns what facts to register and elaborate, by economic theories and differentials. Or am I again an idealist? What, in fact, is the functional relationship between the two disciplines? Whose task is it to do the work of establishing causation in either direction?

I suppose that, fifty years ago, geography meant almost entirely the study of physical environment, and this led deliberately into cultural geography. Carl Sauer derives economic geography from the cultural. "Localisation of production and industry is no longer the major aim as in the familiar economic geography which taught distributions of commercial products and analysed them. This now becomes a device in synthesis, not an objective in itself. The economic geography that is in the making is nothing else than culture geography carried down to date, for the culture area is essentially economic, and its structure is determined by historic growth as well as by the resources of the physical area."[1] Cultural geography "welds historical geography and economic geography into one subject."

The name "economic geography" seems first to have been employed by the German, Gotz, in 1882. He distinguished between commercial geography and economic geography, the former serving practical ends, whereas the latter had the "scientific task of dealing with the nature of world areas in their direct influence upon the production of goods." He thus distinguished between physical and economic geography, and the latter was really commercial geography causally treated. Gotz seems to have stressed especially the geographical foundations of economics.

"Geography, the mother of the natural sciences, met economics, the father of the social sciences, and almost unconsciously a deep affection has developed. Thus, we have the new hyphenated subject."[2] Dr. Baker adds optimistically, "The affection will renew the youth of geography . . . the association with geography will be good for economics, to help to keep its feet on the earth."

Twenty-eight years ago Edward Van Dyke Robinson, writing to economists, essayed to state what economic geography is, and what it is not.[3] He spoke of Ritter's introduction of *purpose* into the old injunction of geographers, "locate and describe," and illustrated it by the remark attributed to a famous preacher that it was "so kind of the Lord to have made the great rivers run through the great cities." It reminds me of the young lady watching cricket for the

[1] *Encyclopædia of the Social Sciences.*
[2] *American Economic Association Proceedings,* 1926, p. 113.
[3] *American Economic Association Publications,* 1909. 3rd Series.

first time. "How clever those bowlers are," she said; "they hit the bat wherever the man holds it!" I can match this from my own recollection of a harvest festival sermon in my youth, based on the extraordinary prescience and skill of Providence in providing a world harvest each year to an amount within about three or four weeks' supply of the world's annual demand! Robinson says that man's conscious adaptation of his mode of life to his physical and social environment, under the spur of self-interest, forms the subject matter of economic geography, while this introduces a new element—the psychic nature of man. But the new course of economic geography in the American universities still left him in doubt whether it was either geography or economics or a hybrid compound without true scientific unity. Its parentage is really in the 18th century masses of unrelated facts—everything "useful for a merchant to know." But this *Wirthschaftskunde* is the first thing, he says, that economic geography is *not*. Chisholm's *Commercial Geography* is in this lineage, he suggests, weak in causality and rationality for its empirical collections—replacing the old useless lists of capes and bays by an equally useless list of exports and imports, the latter suffering in comparison by rapid obsolescence. Economic geography is thus certainly *not* commercial geography. His friends, the geographers, gave it a positive test to trace the influence exercised by physical environment on economic activities. But the economist wants it also to ascertain and explain the geographic division of labour, in the localisation of industries in terms of physical factors and also cultural factors. It is, so to speak, a unified scientific discipline connecting up with classical economics through doctrines of division of labour and comparative costs, dealing with principles mainly, and analytical. "No unrationalised fact has any place in economic geography." The relation of economic geography to economics is that of a physical basis to theoretical superstructure; it establishes facts regarding localisation of industry which we must otherwise take for granted. To attempt to instruct students in theoretical economics who know little or nothing of the world of industry from which these theories are derived is like attempting to make bricks without straw.

Karl Sapper says that although the economic geographer and economist frequently use the same materials, they "exploit" them differently. The former consider chiefly the relationship between human economic activity and an area with its material resources. It thus confines itself to objects with duration, whereas the economist thinks transitory phenomena of real significance.

He also says that the geographer usually lacks sufficient insight into complicated economic mechanism—which the most detailed statistics cannot remedy. Nor can theoretical knowledge of economics fully compensate for the lack of personal pracitcal experience

Rühl treats economic geography as a border discipline between geography and economics, but Hettner regards it as a division of geography which maintains a close relationship with cultural geography

concerned with geographical distribution of sources of material.[4] Sapper concludes that economic geography is not far removed from economics, into which field it often overlaps. It is closely connected with political geography, since commerce and economic life are to-day often much more decisively separated by political frontiers than physiographic barriers "which are frequently surmounted with relative ease by modern transport developments, etc." Customs barriers are worse than rivers or mountains as dividers and causes of separate development. He divides his subject into the geography of production, the geography of commerce (which must include the geography of transport) and the geography of consumption, and shows that, even before the theoretical discussion of economic geography began, there was an enormous collection of data from various sources. But the technique for relating these facts causally is not very clear. Attempts to determine the location of industrial sites are a practical test requiring social and political factors as well as geographical. He says that general economic geography has not advanced beyond beginnings, and even in agricultural geography the available material has not been fully exploited. It should not only describe the degree of past utilisation, but also point out the future optimum and the prevention of wasteful depletion.

Writers on methodology are mostly German. Hettner makes economic geography deal with economic potentialities and the relationships of the various countries, but Rühl makes it treat the geographical distribution of labour and the "difference in the quality and quantity of the production, the commerce and the consumption of various districts."

Economic geography must *begin* with physical environment, because these natural controls are dominant. So its first contributor is pure geography. But this is only the first of three classes. Variations of labour and capital are also important, and these are covered by economic history and economics proper, not by geography. Thus, complementary productions, in seasons or in female labour, are not factors derived from geography. The persistence of a factor through an early start comes from economic history. The data provided by nature have to be handled by man, and therefore human motives are involved; so the balance of marginal cost to himself of the effort and of marginal utility to himself of the product, or its market equivalent, must be made. Utility and value and psychic considerations have entered. In view of this, Atkinson considers that economic geography depends on other sources than geography for most of its data, and is, therefore, not a part of geography, not a mongrel compound, but an "integral part of economics," to be adequately handled "only by a trained economist."[5]

Roorback regards economic geography as a description of the economic life of an area to show in what ways economic life is deter-

[4] *Die Geographie* (1927).
[5] *op. cit.*

mined or influenced by the geographic environment, and particularly to see if through the study of many environments general principles may not be expressed.[6] Such relationships undoubtedly exist, he thinks, but it is doubtful if we can develop them for practical use. But when Professor J. Russell Smith says that economic geography deals with human activities as affected by the earth rather than with parts of the earth as they affect human activities, he seems to be proceeding in the opposite direction.

Geographers have been as active in adopting the term " economic " without doing much distinctive with it as economists have been inactive in using the term " geography " for their basic data. In the composite volume, *The Trend of Economics*, Prof. Weld has a section on " Regional Comparison and Economic Progress," in which he speaks of the three trends now becoming clear : First, realistic studies as opposed to abstract analysis ; second, statistical presentation ; and third, regional comparison. In elaborating the last, he details Mills' five canons of method applied to inter-regional data. " The economist of to-day finds himself face to face with the problem of the inequalities of standards of living in different regions. For example, India and China have not participated in the economic progress which has become conspicuous in some of the Western countries. Many explanations have been offered for the economic backwardness of regions in Asia, Africa, and South America. Which explanation is nearest the truth ? We do not know. It is time we were finding out. Scientific comparison seems the most obvious method. What is required is a thoroughgoing search for the *causes* of the differences in the separate regions." Surely this is economic geography in the truest sense, yet he never once uses the term " geography."

The word geography does not appear in the indexes to the first forty years of the *Economic Journal* until we get Radford's *Industrial and Commercial Geography* mentioned with approval as a useful fund of information preliminary to economic theory. The *Encyclopædia Britannica* (14th Edition) has no mention of economic geography in its index. Palgrave's *Dictionary of Political Economy* (1896) includes an article on commercial geography, which is for a large part economic history ; it contains no reference to causal geography in the economic sense, except the conventional reference to England's natural advantages. It is very much the same story when we look in geography literature for economic theory. The index to the *Geographical Review* over a long period of years contains hardly any reference to economics in its analytical or theoretical sense. Probably the nearest that it gets to it is in an article by Chisholm on " World Unity," where he postulates the tendency towards the equalisation of economic development throughout the world in capital, in population density, and in skill—an important economic generalisation akin to the second law of thermodynamics and fraught with vital consequences in the field

[6] *American Economic Association Proceedings*, 1926, p. 123.

of foreign trade and also in the extent to which natural resources will be fully developed. But it is a generalisation of his own which does not base itself on any recognised economic field. The one place where we should expect to find the relation between economic theory and geographic fact thoroughly worked out would be in the twelve yearly volumes of *Economic Geography*, issued in quarterly parts by Clark University, but even here I fancy it would be found that this field has never been directly attacked—all the treatments being realistic, and, so far as economics are invoked, only what I shall later on describe as connections of the first degree. The nearest we get is something on the following lines : Six economic principles help us to understand why wheat production in different parts of the world occupies a varying proportion of the land. These principles are summarised briefly as follows :—

(1) The crop most limited in climatic requirements will have first choice—it possesses a sort of natural monopoly.
(2) The question of small bulk or weight per unit of value to bear transport charges.
(3) Diversification and seasonal requirements.
(4) Diversification to maintain soil fertility.
(5) Tending to grow the most productive crops (value per acre) on the most valuable (or scarce) land.
(6) Character of the population and their skill.

These are not exactly part of the main body of economic analysis. but they are the nearest that geographical induction generally reaches.

Modern works on realistic economics contain much geographical matter, and those on commercial geography important summaries of economic factors. Thus, a chapter in Seligman's *Principles of Economics*, and one in Dr. Dudley Stamp's *Commercial Geography*, dealing with the localisation of industry, might even be changed over, without doing any real violence to the balance or trend of either work.

A Classification Suggested.

I now suggest that we classify geographical explanations of economic facts, which are thus also quite often reversible as economic explanations of geographic facts, first as the simple static, second as the simple dynamic, third as the inductive static, fourth as the inductive dynamic, and fifth—being the most rare—as theory, inductive and illustrative. The first, the simple or direct static, is the type best known to us, filling our commercial geographies and our realistic economic text-books. Its method is to account for one fact or set of facts, by another set, not indeed in a connection obvious until it is pointed out, but, when stated, requiring or securing no supporting argument, no discrimination against other possible causes or connections, and certainly involving no analytic and theoretic body of economic principles either to verify it or in itself to form an illustration. These often involve a certain element of history. In general, this class includes such

statements as that a given port owes its prosperity to the fact that it lies on the trade routes between two wealthy or populous areas.

The completion of the Erie Canal in 1815 gave to New York, then a city of secondary importance, a position of undisputed pre-eminence.

In the north, Havre has latterly been exposed to the keen rivalry of Dunkirk, the only French port on the North Sea, a port which in recent years has been the most rapidly rising of all French ports, in consequence of its being so favourably situated for the supply of the northern manufacturing towns, with their imported raw materials (above all, South American wool) and for the export of their manufactured products, including iron, beetroot, sugar and oils.—(*Chisholm*, *p.* 366).

Antwerp being the nearest great port to the principal manufacturing region of Germany, it is the chief outlet for that region for goods requiring railway transport, and this fact has greatly contributed to the recent development of the port.—(*Chisholm*, *p.* 371).

The second or simple direct dynamic class accounts for a *changing* set of facts by another set *changing* with it.

The slaughtering and meat-packing centres have gradually moved west with the change in the ranching frontier, and the incipient industries of the Paupu slope are still largely determined by their propinquity to the forests, the orchards, or the river fisheries.—(*Seligman, Principles of Economics, p.* 42).

Accounting for an important part of the trade of St. Louis, with its two great waterways in communication with the ocean, by the Erie Canal and the Mississippi, Chisholm says, " Here reside the merchants who handle a large part of the grain grown in the region to the west, including eastern Kansas and Nebraska. The nearest ports for that grain are Galveston and Houston, which latter port is now connected with Galveston Bay by a channel 25 feet deep. If the railways to these ports become congested, and are consequently disposed to charge too high rates, the merchants can apply for rates by rail or river to New Orleans, by rail to Baltimore or some other eastern port, or partly by water by the route here spoken of to New York. The grain traffic by the old Erie Canal declined very rapidly, but this did not prevent it from having a great influence on the cost of carriage." (*p.* 631.)

The third, or inductive static class, draws lessons from a *number* of instances in the first class—*e.g.*, cases in which *transport* is involved :

With the increase of facilities and lowering of costs, geographical situation is yielding to the facts of artificially created location.—(*Seligman*, *p.* 45).

Again, *population densities* provide a synthesis :—

The striking facts here are, first, that a very intensive agriculture combined with advanced commerce, as in China and Japan, can support a population as dense as that of a highly developed modern industry, and, secondly, that the greatest density is found in those countries like Belgium, England, and Holland, which unite very diversified industry with a fairly intensive agriculture.—(*Seligman*, *p.* 50).

The difference between the soil of the black belt and the hill lands of Alabama explains the varying aspect of the negro problem there, and in like manner the contrast between the arable and the grazing lands of the Far West enable us to comprehend the economic and political conflicts between the farmer and the ranchman.—(*ibid.*, *p.* 39).

Some writers have even gone so far as to maintain that all civilisation can be expressed in terms of the great rivers and seas. Of the twenty largest cities of the United States, nine are found on the sea coast, five on the northern lakes, and five on the Mississippi and Ohio rivers.—(*ibid.*, *p.* 41).

This is economic geography, but not economic theory. To provide economics with a problem for analysis, details of the change in traffic passing in different directions at different levels of freight rates and their fluctuations would be necessary. Or perhaps lessons in equilibrium between two types of transport with different ratios of

working costs to total costs might be obtained therefrom. Chisholm provides a factual dwelling, but the economist is not yet dwelling therein.

Roorback generalises a " Mediterranean type of agricultural life, in an economic sense, to be found wherever certain geographic facts are grouped : " Southern California, the central valley of Chile, the Cape Provinces of South Africa, and the extreme north of Australia. There are differences of detail, but the economic type distinctly emerges from the geography. In the same way, he groups the economic type of Scandinavia, Washington, British Columbia, Southern Alaska, South Chile, Tasmania, and South New Zealand.[7]

Where are crops of small bulk and high money value invariably developed ? Where transport is difficult and expensive. Corn whiskey in Kentucky mountain, opium in North-West China, coffee on Colombia plateaux, cocaine on Eastern Andes, in Peru and Bolivia, tea in Central Japan and Assam. " The relation of value to bulk is roughly proportional to the degree of inaccessibility of the region."[8]

These examples of the third degree, generalisations from a number of instances of the first degree, are of increasing importance, as we shall see immediately.

The fourth or inductive dynamic class draws lessons from a number of instances of *changing* facts in sets or pairs with their correlations. This obviously is getting nearer to help for economic theory than any of the foregoing.

The fifth class goes further than the fourth, if it brings the general principle that emerges into relation with analytical work, and perhaps produces generalisations which will " work " as prophecies or further explanations. But I cannot find many clear examples in recent work.

J. E. Orchard advanced along this line when he claimed that the geographic study of minerals is certain to involve economic theory and to make contributions to it. He illustrated by a geographic explanation of the agitation for the nationalisation of mineral resources. Pressure comes through a demand for higher wages or lower prices. The emergence of a period of abundance in particular countries has the basis of different economic conceptions of property rights, and the threat of future scarcity in particular places has a like differential in the property concept. The period of abundance lay behind the *laissez faire* theory, and the current concept of property rights is differentially distributed with scarce or abundant minerals.

Now, in the present state of economic geography, it seems to me that most progress is naturally being made in the third class. The " photographs," so to speak, being taken in the first class are being brought together for induction under the third. But as time goes on new photographs will be taken of the same physical locations under the first class, and the endeavour to relate the old and the new will

[7] *loc. cit.*, p. 123.
[8] *loc. cit.*, p. 124.

call for measurement and explanation of the change, and bring them under the second class. The accumulation of instances under the second class will then provide masses of material for induction under the fourth class. Here economic theory fully emerges, but not before. For economic theory is not based on static conditions—it is essentially related to incremental changes of cause and effect, or related effects, and only as geography registers changes over time can it be of full advantage to economic theory.

The Geography of Well-known Economists.

Adam Smith's *Wealth of Nations* was not so much a piece of abstract reasoning as a systematic induction from history and geography, in what was really a piece of political propaganda of high wisdom. It was a great protest against nationalism, and therefore it was cosmopolitanism. But no man can be a cosmopolitan without being a geographer. It has more geographical references in proportion to its bulk than any later important work. In its opening pages it affirms that the corn of a rich country will not always come cheaper to market than that of the poor, comparing France, Poland, and England. The limits to the division of labour set by the extent of the market provoke references to Scotland, to London, Calcutta, North American colonies, Holland, Africa, and the sea of Tartary. He gives many illustrations of my third class and some of the fourth, occasionally developing them into the fifth. For example, Adam Smith had an elaborate economic doctrine that the monopoly in colonial trade only redirected trade and diminished its total quantity, through its effect in forcing part of the capital of Great Britain from a direct foreign trade of consumption into a roundabout one. We need not concern ourselves with the soundness of the doctrine, challenged as fallacious by McCullock, but Adam Smith illustrated it by the development of tobacco—Maryland to Virginia,—the trade of various West Indian islands, and certain Mediterranean States. He dipped into historical geography by citing the earlier economic position of New York, New Jersey, Georgia, and Pennsylvania before the Navigation Acts. The forcing of the capital into different channels brought in linen from Germany and Holland. To show that a monopoly of agricultural colonies does not force the development of manufacturing in the mother country, he cites Spain and Portugal, distinguishing them from Great Britain by economic reasons about currency, taxes, and justice. The economic conditions of Cadiz and Lisbon are compared with Amsterdam and London, and accounted for by a theory of the profits of stock. Any natural disposition to overtax those not represented is rebutted by citing the case of Guernsey and Jersey as well as other colonies. The trade of Hamburg is accounted for by a theory of hurtful economic regulation. Sweden and Denmark are contrasted with Holland on a theory of freedom of trade and exclusive company rights. The difference between the extent of fertile territory required to support equal populations of shepherds and hunters respectively

brings in comparisons of different parts of America, Africa, and East Indies. Why does Batavia "surmount the additional disadvantage of perhaps the most unwholesome climate in the world"? Its geographical position on long trade routes, all defined, is cited and described. Why are the Moluccas thinly populated? Because of the policy of destroying produce in bountiful years to make a price schedule in Europe for a trade they themselves alone can compass—a fine feature for economic analysis.

A famous example of the inductive method is John Stuart Mill's discussion of peasant proprietors. He does not elaborate from first principles the economic results of the whole produce of land going to the owner-worker without a tripartite division into rent, profits, and wages, for he calls it one of the most disputed questions in the range of political economy. But, instead, he examines conditions in Ireland, Switzerland, Norway, the Palatinate, Saxony, Prussia, Holland, Flanders, Channel Islands, France and Lorraine, takes the common factors and then makes generalisations. He declares, first, there is no necessary connection between the form of landed property and an imperfect state of the arts of production; second, that the most effective use of the soil is not endangered; third, that it is supreme in developing industry, intelligence, and frugality; last, that it raises the standard of life, and does not unduly increase the numbers of the population.

We find no such rich geographic texture in the abstract reasoning of Ricardo, which was "unfavourable to any regional treatment."[9] The German historical school introduced again ideas of relativity in time and space. J. S. Mill, as we have seen, made judicious use of such facts, but as we get down to modern times the text-books of principles are rather bare of geographic illustration. Seligman's *Principles* is well based on such facts, but even so objective a writer as Taussig, in his *Principles*, provokes the criticism of a geographic reviewer that he has very little geography, save for an interesting discussion of causes and consequences in division of labour, and some material in the theory of international trade. The reviewer sums up that there are few points of contact between the fields of economics and geography.[10]

The latest highly analytical works of Pigou and Keynes are nearly bare of *geographic facts*.

A Sketch Plan of Economic Theory.

Let us now lay out the field of economic theory on broad lines, as given in conventional form in the text-books, and indicate where lies most opportunity for geographic illustration or induction :—

Definition of wealth of various kinds.

Productive and unproductive labour.

Value in use, value in exchange.

[9] Robinson : *loc. cit.*, p. 249.
[10] *Geog. Review*, 1917.

Capital as the means of future production.
Land as capital.
Demand and Value.—Marginal desire and utility, satiety.
Elasticity of demand and its measure.
Successive utilities—changes in demand curves.
Exchange and Markets.—Nature of markets by common price.
Market values and means of exchange.
Supply and Value.—Limits of supply, costs and marginal expenses.
Constant expenses. Diminishing returns. Increasing returns.
Supply price and competition.
The representative producer.
Modification of supply.
The equation of demand and supply at the market price.
Joint products. Joint demand. The principle of substitution.
Supply at a fixed price.
Interest and the share of capital in distribution.
The supply of new capital. The theory of interest as price forces abstinence or waiting. The risk element. The movement of interest rates. Excessive saving.
The Problem of Rent.—Land and fixed capital. Differences in fertility—the margin of cultivation. Rent and prices, contract rent, building sites. Quasi rent. Influence of progress on rent. Rent and values of land and interest. Tenant farming and occupying ownership.
The Problem of Wages.—The demand side—subsistence levels. Supply side—marginal productivity. The wages fund. Lump of labour theory. Unemployment and the level of wages. The influence of population. Special problems of incentive and productivity. Minimum wage doctrines. Trade Union action. Time wages and piece wages. Group wages. Profit sharing. Sliding scales.
The Problem of Profits.—Remuneration for supervision. The rental element for superiority.
Money and the Exchanges.—Barter. The desiderata of money. The quantity theory. The function of banks. The store of value. The problem of the standard of value. Paper currency and its regulation. Coinage.
Values in International Trade.—The effect of exchange—the law of comparative costs. International division of labour. The balance of trade and international obligations. The foreign exchanges. Par of exchange. The gold standard. Gresham's Law.
The influence of protection or tariffs on prices, on employment, on profits, on wages. Government interference. Taxation. Incidence. Equality of sacrifice. Progression of various kinds. National Debt and its influence.

When we survey this field of potential action, it will be obvious at once that geography has no lot or part in a considerable range of

it. Material objects need to have an appeal to human psychology before they are wealth. At least one half of the theory of value is psychological. A good part of invested capital is not geographical. Political and social institutions are not of this order, and, therefore, in the fields where these matters predominate geographic generalisation is at a minimum. Where, however, we come to Land we should expect to find that if the theory, for example, of no-rent land and marginal land of various types has any validity, we ought to be able to see these things objectively, and it is in relation to land and minerals that induction from geographic facts should be most productive of theory or illustrative of it. Professor Baker says: "Geography is basic in land economics, conditions and location affecting land values; also in manufacturing, for it gives many of the differentials between factory locations and costs; it is vital to transport trade."[11] In fact, he goes so far as to map out a practical programme for economic geographers of an ambitious kind. "To provide information which will aid the farmers, the miners, the engineers, the manufacturers, merchants, and to transport men to utilise the natural resources with the greatest economic advantage, is the opportunity and duty of workers in the field of economic geography." Professor Taylor, more sanguine than most of us are likely to be, summarised the vast field of economic geography which is needed by the modern farmer in his work as farm manager, planning his production programme and arranging for the sale of his products. But theory of rent of a Ricardian order interlocks agricultural uses and building site values. We get the well-known economic principle that high rents do not make high prices, but are the result of them. There is an influence of city rents on the cost of living and the rate of wages; there is a causal connection between urban growth and depopulation of urban districts—all of which may find their geographic illustration. All questions of location and their effect upon production are capable of geographic illustration. Here is a generalisation which is capable of economic analysis and certainly of illustration: "The geographic location of a manufacturing plant assumes an importance now that did not obtain when competition was less keen and almost any site would do. All the geographic factors have to be considered, and a mistake in only one of them may offset good judgment in all the rest." Again, the geographer finds various methods of land utilisation and describes them. The economist asks the questions, why and wherefore—the causes. He finds certain uses bring misfortune; he seeks to impose conditions, and so considers values.[12]

When we get to the theory of demand and value, geography is quiescent. It is not, however, out of the question to see some possibilities. Anyone illustrating the principles of inelastic and elastic demand respectively, and taking salt and margarine as examples, might extend the study into the relative stability of employment in

[11] *American Economic Association Proceedings*, 1926.
[12] Prof. R. T. Ely: *American Economic Association Proceedings*, 1926, p. 115.

geographical areas supplying one as compared with those dependent on the other, to account for their differences. This would be an excellent geographic verification or illustration of the theory. The principle of substitution might well be illustrated by the rise to popularity of particular commodities, supplanting others whose costs had become dearer, relatively, if not absolutely. This change means a change in the economic statistics of geographical areas, which can be examined and stated.

International trade proceeds on the theory of comparative costs with certain important modifications that I need not introduce here. It shows that it is quite possible for A to export to B commodities in which B has the greater natural advantage, provided that B's natural advantages in another commodity are even greater. This ought to be susceptible of verification by reference to geographic facts.

Geography has little concern with money, banks, or the technique of trade and productive methods, but I would not conclude that the economist can make no use of geography at all in these fields. Atkinson says, "But if the metric system gives Germany an advantage over Great Britain in South American markets, it becomes to that extent a factor in the geographic division of labour—that is, it tends to locate the economic complement of the wheat fields and cattle ranches of Argentina in Germany rather than England."

Then, again, banking systems may affect geographic facts. If the bank reserve system in America draws money from country to cities and gives them a lower interest rate, then it becomes a factor in concentrating industries and determining the geographic division of labour.

Technical production is not economic geography. But if the Bessemer process causes migration of steel industry to areas where the ores are free from certain impurities, it is part of economic geography.

A few years ago the American Economic Association had a round table discussion on the various relations between economics and geography.[13] It covered the geographic basis of agricultural production, land economics, economic concept of property in minerals, the study of pioneer belts, and geography in foreign trade prospects.

This probably expresses fairly the field of geography which actually lies within the field of economic theory, but the range of the latter is extensive, and may—to reverse the metaphor—throw valuable side lights at unexpected points of geography. But economics, though now highly specialised, is really one and indivisible. The geographer who aims at strengthening his grasp or causality especially for expository purposes, by learning economics, would do well to cover

[13] *Proceedings*, March, 1926, p. 112.