The Geographer's Task

An Inaugural Lecture
Given in the University College of Rhodesia

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by

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THE GEOGRAPHER'S TASK

I

"What is Geography?" H. J. Mackinder began with these words when he addressed the Royal Geographical Society in 1887 "On the Scope and Methods of Geography". He was then chief advocate of "the New Geography" which he referred to as "the science of distribution; the science, that is, which traces the arrangement of things in general on the earth's surface". He hoped that thus defined it might be recognised that geography was more than a body of information enlivened by association with exploration and discovery and be fully established as a discipline at university level. Such development was overdue in Britain. Six months later, at the age of 26, Mackinder was appointed to a newly-created Readership in Geography at the University of Oxford, and in 1899 he was appointed Director of the first British School of Geography at the same university. There were similar stirrings in other universities at about this time, and eventually the first Honours School of Geography in Britain was opened in 1917 at Liverpool University under Professor P. M. Roxby (Steel, R. W., 1967). But development in the thirty years between Mackinder's far-reaching lecture and the endowment of the John Rankin Chair was steady rather than spectacular, and Professor K. C. Edwards (1967) recalls that shortly after the First World War there were still only five professors of geography in Britain. Significantly, all of them and all other heads of British geography departments had been trained in disciplines other than geography, chiefly in history, geology, botany, physics and classics. It is therefore not surprising that there were markedly different viewpoints within geography.

In the half-century since then geography in Britain and in the world-at-large has expanded rapidly, and nowadays most professional geographers have been trained as such. But no universally recognised definition of the subject has emerged. On the contrary, rapid growth and development in response to varied changing circumstances have led to a wide diversity of viewpoints.* These provide for stimulating discussion on the history and nature of geography at undergraduate and other levels (see, for example, Hartshorne, Freeman, Wooldridge and East), but sooner or later they prove tiresome and most geographers, including myself, are content to indicate their view of the subject in works rather than words. After ten years or so in such a frame of mind, my appointment as first Head of the Department of Geography at this College had mildly disturbing effects. What is Geography? There is no definitive answer, and I find it difficult to be explicit in respect of my own thoughts on this question. Nevertheless, I feel obliged to provide some indication of what I see to be the subject matter of geography, the objectives in teaching and studying geography, and the methods and merits of doing so.

II

Professor R. Hartshorne (1960) has offered an excellent definition of the geographer's task which is "to provide accurate, orderly and rational description and interpretation of the variable character of the earth surface". A few moments reflection on a random selection of landscapes will reveal the infinitely varied mosaic that constitutes the earth surface. Some landscapes are predominantly "natural";

* Professor Alice Garnett (1969), however, is of the opinion that these are not so widely divergent as those of the early twentieth century.

but there are now relatively few parts of the world that have escaped man's hand. At the other extreme, there are landscapes, mostly townscapes but not entirely so, which are predominantly man-made. However, places so heavily cluttered with human phenomena that the physical environment is little more than a platform and a backcloth also are very limited. Most landscapes, in fact, reflect a reasonably balanced interaction between physical and human forces and are composed of a wide range of natural and cultural phenomena.

There is no simple landscape. Nor is there a static landscape. Each contains facets cut in the geological and historical past, and current processes are fashioning the landscapes of the future. It is implicit in Hartshorne's definition that geography must be concerned with the past in order to provide an interpretation of the present. The geographer's concern with the future is not so clearly discernible in Hartshorne's statement, but it is evident that geography will and does derive value as an applied science by forward projection of changes and trends observed to be responsible for the dynamic present; and it is a logical extension of the geographer's task to describe, in so far as he may, the landscapes of tomorrow.

The variegated earth surface is not, of course, the geographer's exclusive domain. On the contrary, many other disciplines are intimately concerned with aspects of landscape, and it is fortunate for geographers that this is so. However, whereas each of the systematic sciences limits its attention to a particular group of phenomena, the geographer is distinguished by his concern with the total occurrences that combine to constitute a place. It is the geographer's task to grapple with extremely heterogeneous phenomena, and to identify and describe the complex inter-relationships which are responsible for the entire reality

of a place. Analysis of the constituent phenomena clearly must precede description and explanation of the whole. The geographer therefore looks to many systematic sciences for information, and Professor Hans Carol (1969) has conveniently summarised this relationship with other fields of knowledge in diagrammatic form. It will be noted that the geographer draws on the results of other scientists. At times, when required information is not available, the geographer may have to cross into and work in the sociologist's or geologist's field, but it is erroneous to consider the geographer as a super-scientist who can readily turn his hand to anything. As long ago as 1887 Mackinder warned that "it is a mistake . . . (to) . . . include too much in geography. Geography has bearings on many subjects, but it does not bodily include those subjects." Nevertheless, although not a jack-of-all-trades in the strict sense of that phrase, it will be clear that the geographer must be conversant with a variety of other sciences if he is to make intelligent use of their findings.

So far I have been dealing with an ideal definition of geography. Every geographer should have such an ideal firmly in his mind lest he lose his way. Nevertheless, we must agree with Professor Roxby (1930) that ". . . a complete school of geography is a remote ideal, and a complete geographer an almost impossible conception, so that some difference of emphasis between various schools of geography is not only permissible but desirable in the interests of the subject". In accepting the need to limit the geographer's task several problems of importance emerge. First, subdivision denies the unity of that which we believe to be a real whole. For example, the dichotomy between physical geography which is concerned with aspects of the environment and leans towards the natural and earth sciences, and human

geography which is concerned with man and his works and is inclined towards the social sciences has for long characterised and threatened geography. It is, however, difficult to deny the value and convenience of this division; and at this College the basic training in Geography is organised in parallel courses, Physical Geography I and II and Human Geography I and II. We do, of course, try to impress that this is an unreal division but its very existence takes weight from our words. In the second and third years of study we provide courses on the geography of contrasting regions and it is intended that in these the strands of physical and human geography shall be woven together in an appreciation of reality. But I sometimes fear that Regional Geography is seen as a third major division and that the unity of the subject is scarcely recognised, and this in spite of fieldwork (TABLE 1).

TABLE 1

GEOGRAPHY AT THE UNIVERSITY COLLEGE OF RHODESIA

(a) First-year Courses

PHYSICAL GEOGRAPHY I

Structure of the earth; fundamentals of geomorphology, climatology and the hydrological cycle; introduction to soils and biogeography.

HUMAN GEOGRAPHY I

The nature and scope of human geography; an introduction to the study of population, settlements, land use and economic development, transport and communications; selected local studies in which the several topics are brought together.

PRACTICAL WORK

Appraisal of various map projections; analysis

and interpretation of selected medium and large-scale maps; an introduction to elementary cartographic techniques.

(b) Second and Third-year Courses

PHYSICAL GEOGRAPHY II
Geomorphology; climatology and hydrology; soils and biogeography; all with special reference to central and southern Africa.

HUMAN GEOGRAPHY II
Economic geography; social geography; historical geography.

REGIONAL GEOGRAPHY OF AFRICA
An advanced course with special reference to central and southern regions.

REGIONAL GEOGRAPHY II
Regional geography of one or two* other regions (e.g. North-western Europe, North America, Great Britain, South-east Asia, South Asia).

OPTIONAL COURSES*
Advanced courses in systematic branches of geography such as:

- Geomorphology
- Hydrology with climatology
- Biogeography
- Photo interpretation and photogrammetry
- Rural settlement and land use
- Urban geography
- Economic geography
- Historical and political geography
- Social geography

PRACTICAL WORK
Cartography and statistical methods; photo interpretation and an introduction to principles of photogrammetry; elementary surveying.

LONG ESSAY AND DISSERTATION*
A geographical essay (5,000-8,000 words) and dissertation (8,000-10,000 words), suitably illustrated, on a subject approved by the Head of the Department of Geography.

FIELDWORK
Fieldwork forms an integral part of each year of the course, and exercises on fieldwork are taken into account as part of each examination.

Secondly, limitation of the geographer's task involves selection, and selection involves determination of what is significant which, in turn, depends upon what are seen to be the objectives of teaching and studying geography. Thirdly, but in a similar vein, limitation involves specialisation, and it is necessary to consider what degree of specialisation is appropriate at the various stages of teaching and learning and what is the ultimate degree of specialisation within geography bearing in mind the ideal geography. These are questions which will recur in the course of this lecture, but now I must indicate lines along which the geographer's task may be circumscribed.

Specialisation follows one of three directions or, more commonly, a combination of all three. First, one may select particular areas or types of areas for comprehensive study. Thus there emerges, for example, regional geography concerned with the tropical lands, or with Africa, or with Rhodesia, or with the Eastern Highlands of Rhodesia, and so on. Regional geography is viable at a variety of scales and

* The number of regional and optional courses to be taken and the requirement of a dissertation in addition to a long essay depends upon the degree course. Geography is available as one of the subjects for the B.A. and B.Sc. General Degrees and for a B.A. Honours Degree. Students reading for a B.Sc. Economics Degree may take up to three papers in Geography.

merges into local studies. Indeed, detailed local studies are a necessary stage in the preparation of accounts of wider regions, and without the former the latter would lack sparkle and reality. Furthermore, small-scale regional studies highlight facts and factors which are subdued or lost in necessarily more general accounts of whole countries or continents, and regional studies at different scales enrich one another. Regional geography need not be concerned with contiguous areas, though this is usually the case; its distinguishing feature is its overall concern with the total phenomena of selected places. Thus we may regard urban geography, which is concerned with all aspects of urban areas, as a type of regional geography. And Professor Edwards (1967) advocates development of "rural geography" as the counterpart of urban geography—a view which I have long supported but which lacks general recognition.

It is, however, not usual to regard urban and rural geography as types of regional geography but as branches of systematic geography each of which is concerned with one group of the constituents of the earth surface. This is the second direction of specialisation and it brings geographers into close contact with workers in related fields. While some branches of systematic geography such as population and agricultural geography, climatology and geomorphology are known by labels which relate to elements of the earth surface, others are named by reference to categories of activities and, by inference, are concerned with all the varied phenomena associated with the activities referred to. Social geography, political geography, economic geography and colonial geography are examples of such branches. The last-mentioned is a branch that never flourished amongst British geographers. Professor R. J. Harrison Church (1948) stressed that colonial geography was not the

regional geography of colonial territories but that it should deal with the effects of colonial contact. Such sentiments had prevailed in France, Belgium and Denmark but it proved impossible to convince the body of British geographers that effects of colonial processes could not be adequately studied within established branches such as economic, social and political geography. I refer to this matter to show that, as is the case at present with "rural geography", there are checks on the process of subdivision and, whether or not these operate to everyone's satisfaction, it is fortunate for geography that they do function. "Wilful fragmentation" could lead to the downfall of geography (House, J. W., 1965).

The third direction of specialisation differs from the others in that it is not so much concerned with the subject matter of geography as with the approach to the subject. It consists of adopting a viewpoint or theme which provides a basis for selection and organisation of data. Several such viewpoints are widely held and often are offered as definitions of geography. Broadly speaking they fall into two types. One stresses geography's concern with inter-relationships between heterogeneous phenomena and has an ecological slant. Themes such as "geography is the study of man in relation to his environment" and "geography examines the role of man in changing the face of the earth" lie within this category. The other stresses geography's concern with the distribution of phenomena and has a locational slant. It embraces viewpoints such as "geography is the study of areal differentiation" which place emphasis on the occurrence of phenomena or processes over areas, and other phrases such as "geography is the scientific study of distributions" which place emphasis on the location of phenomena at specific places.

A few moments' consideration of these lines

whereby a geographer may reduce his task to manageable proportions will reveal the virtual impossibility of pursuing only one such line, and also the impossibility and, indeed, the undesirability of eliminating overlap between the various specialisations within geography and between them and parts of other disciplines. Hence the difficulty of providing anything but an ideal, and therefore unrealistic, general answer to the question "What is Geography?" Specific answers relate to various combinations of parts of geography which characterise individual occurrences of the subject. Thus my geography, if I may speak personally and with reference to my principal interests, is the social geography of central Africa studied as far as possible from an ecological point of view. The geography, or rather geographies, offered at this College are indicated in the synopsis of our syllabuses which are available for those who are interested (Table 1).

III

Before turning to the geographer's methods it is necessary to briefly mention some objectives of teaching and studying geography. Broadly speaking these fall into three groups. First, in common with other disciplines at university, geography seeks to develop intellectual capacity, to sharpen critical faculties, to promote logical thought, and to foster ability to communicate intelligibly. Secondly, geography seeks to provide an over-view of the world. It is, in fact, part of the geographer's task to be intelligently aware of the variety of physical and human circumstances that prevail and of their occurrence over the surface of the earth. Comparative studies facilitate appreciation of any particular situation, including that which pertains in our own locality. In short, geography should provide perspective and prevent

parochialism. This is a particularly valuable objective now that modern techniques of communication are increasingly bringing incomplete news and views into the everyday life of the ordinary man from the four corners of the earth, if I may use that phrase. Geography can provide the general awareness of the world we live in that is frequently a prerequisite for appreciation of limited statements passed on as news. The Education Committee of the Royal Geographical Society stressed this objective in 1955 and suggested that geography "is a most important means by which international understanding and tolerance may be developed". More recently U.N.E.S.C.O. (1965) has repeated this objective and states that it is the business of geography to give a balanced appreciation of world problems and to promote "the valuable idea of the solidarity which should exist between all men".

While noting the importance of an over-view of the variegated earth surface as a whole, it is recognised that specialisation within geography is necessary if geographers are to contribute significantly to scientific knowledge and towards the solution of human problems. A third objective of geography at an advanced level therefore is the acquisition of a specific body of knowledge and techniques so that geographers may apply themselves as professionals in a necessarily limited field. That this objective is not inconsistent with the geographer's broad holistic viewpoint was clearly stated as long ago as 1887 by Mackinder; he reported that "if you would do original work in the science you must specialise . . . As a subject of education, however, and as a basis for all fruitful specialism within the subject, we insist on the teaching and grasping of geography as a whole." This statement is of particular value nowadays when the temptation to specialise at an unduly early stage is greater than ever before.

To conclude this brief comment on objectives of geography I should note that the study of geography at successive levels develops a wide variety of skills and techniques that are of general value. Whether the acquisition of these skills be regarded as an objective or consequence of geographical study is immaterial, but possession of them is undoubtedly an asset.

IV

This leads me to some discussion of methods and techniques the mastery and development of which is part of the geographer's task and, paradoxically, without which the geographer cannot successfully undertake his chosen task. You will recall that the prime task of the geographer is to describe, in terms of both analysis and synthesis, the earth surface or parts thereof. Explanation takes second place and, in any case, often flows from description. Indeed the relationship between description and explanation is so intimate that the two should not be separated. Geographers should endeavour to provide explanatory descriptions, and on this matter the opinion of W. M. Davis written in 1915 is worth quoting at length:

> "It should be explicitly pointed out that the object of explanatory description is not to reveal past conditions from which present conditions have been developed but to present the present conditions in terms of their origin . . . The analytical explanation of a landscape . . . may distract the attention of a reader from the present facts to their past origin, and to that extent the explanation fails of having a truly geographical quality; for a geographical statement ought surely to leave its reader vividly impressed with existing facts . . ."

Contrary to popular fancy, it is no easy task to provide effective, accurate description. Professor H. C. Darby (1962) has explored "the problems of geographical description" and concludes that:

> "it is a humiliating experience for a geographer to try to describe even a small tract of country in such a way as to convey to the reader a true likeness of the reality . . . How difficult it is to transcend a painstaking compilation of facts by an illuminating image . . . We must have the technical description . . . (but) we also need imagery, ideas, beautiful words well used to give full enjoyment and appreciation."

We must have the technical description, and geography is increasingly turning to quantitative measurement and methods of statistical analysis to identify facts; to assess the reliability of factual information; and (perhaps most important of all) to provide an indication of the validity of generalisations which lie at the heart of geographical descriptions and of projections which form a valuable part of applied geography. This move towards what has been described as another "New Geography" perhaps is overdue and is to be welcomed, but it must be recognised that geography cannot be reduced to the status of an exact science. Some branches of geography are more amenable than others to quantitative techniques and statistical analysis. The branches of physical geography, and climatology in particular, generally permit greater use of such methods. On the other hand, I have suggested elsewhere that "it is presumptuous to claim that any general analysis of human affairs is entirely objective . . . (and) the writing of social and human geography (is) something of a personal affair" (Kay, G., 1967*a*). Minshull (1967) goes still further in a lively discussion of the trend towards a narrow mathematical approach to geography and suggests that we should "redefine and reaffirm the descriptive, subjective, personal nature of regional geography". In short we may conclude that geography requires literary and mathematical skills, and that whereas the balance hitherto has favoured literacy it is now shifting in favour of numeracy.

Unfortunately, as Professor P. E. James (1962) has pointed out "the great majority of those who have mastered the mathematical methods cannot use the English language effectively, and most of those who have some facility with language are left speechless in the presence of multiple regressions". Consequently, the emergence of a "school of quantifiers" has brought schismatic tendencies based on method rather than subject matter into geography. There is another potentially damaging aspect of the "New Geography" of the sixties. It has long been one of the advantages of geography that it is intelligible to the lay public, including other scientists of all kinds. As long ago as 1869 George Perkins Marsh saw the virtue of being widely understood and was pleased to note that geography avoided the "forbidding nomenclature" and "barbarous etymology" that proliferate in other sciences. On the other hand, too often "only the esoteric is deemed scientific" and in some respect it pays to be recondite (Lowenthal, 1960). It is, however, unfortunate that the sense of an increasing proportion of modern geography is either lost or veiled to many readers, including geographers, amongst a welter of mathematical formulae and pompous jargon. Professor H. C. K. Henderson (1968) has appealed to the "quantifiers" to resist the temptation to exhibit their mathematical skills—which, in any case, we do not doubt. And Professor E. W. Gilbert (1960) has warned that "it is perilous to allow the subject as a whole to drift progressively further and further away from lay comprehension". I refer to these current difficulties in methodology not because I am pessimistic about the outcome but to illustrate problems that are being faced as geographers seek to identify and accommodate the benefits, in terms of both analysis and presentation, that quantitative techniques have to offer. Similar problems arise as geographers increasingly adopt the use of models

and hypotheses as aids to analysis rather than simply as expressions of generalised findings. But limitations of time preclude further elaboration on the "New Geography" which, I suspect, is not particularly new anyway.

Phrases and formulae, models and hypotheses are not, of course, the only means of description and analysis available to the geographer. On the contrary, the geographer makes full use of all kinds of maps, diagrams and photographs both in enquiry and in presentation of results. Skill in the use of such media is as important as skill in the use of words and numbers, and it is therefore with reluctance that I make such brief reference to these traditional though by no means obsolete aspects of the geographer's work.

Perhaps I may give some attention to such matters and at the same time draw together some threads of this discourse by brief reference to a current research project, namely a geographic and cartographic analysis of African population in Rhodesia. In order to provide an accurate, orderly and rational description of the distribution and density of population, two maps are being prepared at a scale of 1 : 1,250,000. The first shows the occurrence of the rural population by dots, each representing 500 persons, realistically distributed within each census enumeration area by reference to settlements shown on large-scale topographical maps; and the occurrence of urban populations by proportional circles representing 2,500 or more persons. This map gives a realistic, general impression of population distribution, but as it stands it provides limited quantitative information; without resort to dot-counting it is a qualitative statement. A choropleth map giving population densities allows a more immediate extraction of useful data. To combine the authentic impression of the dot map with the quantitative qualities of a

choropleth map, a grid of 2,145 units, each with an area of 195 sq. km. (75 sq. ml.) has been drawn up and, by placing this over the dot map it is a simple if tedious matter to calculate the density of population in each unit. The individual values may be grouped into eight categories and these presented on a map in a suitable range of colours. Together these maps will provide a most interesting and useful description of the distribution and density of African population in Rhodesia and they are capable of analysis to provide specific detail on any major region. (For further discussion of the methods of mapping and advantages thereof see Prothero, 1960, and Kay, 1967*b*.)

The same grid is being used to describe systematically the spatial occurrence of other parameters of the Rhodesian landscape; and in most cases the exercise is directly dependent upon the results of other scientists which are expressed in map form. Characteristics currently being subjected to this analysis are indicated in Table 2. By statistical and cartographical analysis of correlations between these various parameters and the distribution and density of African population (and, in due course, of the non-African population too) I may be able to throw light on the pattern of population in Rhodesia. Note that it is from careful description that explanation and understanding might emerge.

TABLE 2

PARAMETERS SELECTED FOR SPATIAL ANALYSIS IN CONNECTION WITH A STUDY OF POPULATION DISTRIBUTION AND DENSITY IN RHODESIA AT SCALE OF 1 : 1,000,000

PARAMETER	SOURCE OF DATA
1. Altitude	1 : 1,000,000 Relief Map: 6th Edit., 1967.

2.	Relative Relief	1 : 1,000,000 Map of Relative Relief prepared by M. A. Keech of Conex, 1969.
3.	Mean Annual Rainfall	Map prepared by Miss S. Lineham of Meteorological Dept., 1969.
4.	Natural Farming Regions	1 : 1,000,000 Map of Natural Farming Regions published with the *Agro-ecological Survey of Rhodesia*, 1960.
5.	Land Apportionment	1 : 1,000,000 Map of Land Apportionment: 6th Edit., 1968.
6.	Distance from Railway	1 : 1,000,000 Topographical Map: 6th Edit., 1967, with 1969 Rhodesia Railways Timetable.
7.	Distance from Urban Centres	1 : 1,000,000 Topographi- Map: 6th Edit., 1967, with classification of towns based partly on Town Planning Department information.

Other parameters will be analysed as suitable material is obtained.

This cartographic analysis forms the central part of the exercise but it will be supported by literary and field investigations because not all relevant facts and factors are susceptible to such analysis. In particular historical and social facts not available in map form and, indeed, not uniformly available for the whole country must be taken into account. Also, this general, countrywide survey will be fortified by

detailed studies of selected local regions. Such local studies not only are of value in their own right but also they will allow a more realistic interpretation of the generalisations which emerge from the wider study. It has become customary for me in local studies to place considerable reliance on descriptive maps, diagrams and photographs (Kay, 1967, and 1970) and in this study of the population of Rhodesia I shall use such methods to make good my literary deficiencies.

V

I have resumed the position of defining geography in terms of what geographers do, but in concluding I must return to general statements to provide some indication of the merits of geography. Why study Geography?

First, I would recall the educational values and civilising influences of geography to which I already have given some attention. Geography is an indispensable part of school education, and at higher levels it is now recognised as one of the more rigorous and yet more popular disciplines. Gilbert (1960) referred to the general value of geographical study at advanced levels in the following terms:

> "If imaginatively taught, university geography can provide the same kind of liberal education as that given by the Classics—a training for life. Geography can be the right background for the holder of any position, however responsible."

In accepting this as high commendation I would stress that, although the Classics undoubtedly deal with eternal truths, geography is the more relevant to contemporary life.

This leads to my second point which is that geography has particular practical values that are derived

from its varied subject matter and from the range of skills developed to handle it. Geography "develops the particular intellectual skills induced by the habit of seeking correlations of varied and apparently disconnected phenomena, and of drawing together the data of natural and social investigation into a synthetic whole" (Education Committee of the Royal Geographical Society, 1955). The practical value of the geographer's skills has been increasingly recognised in the post-war period, and recently the Parliamentary Secretary to the Minister of Land and Natural Resources at Westminster (Skeffington, 1966) reported that "geography has just the balance of physical and human factors" that planning under his ministry requires. I might add that recent and current trends to bring into geography forward projection of observed trends and to do so in quantitative terms have greatly enhanced the value of applied geography. Indeed, geography has a general value over a wide range of professional and business occupations, and I would single out for special mention those occupations concerned with administration and planning. I do not refer only to those appointments which have the words "Administration" or "Planning" written in their titles but to the wider range of posts which are broadly concerned with such activities and regardless of their special field. Administrators and planners generally have to deal with the real world as a whole, or at least with broad sectors of it. They have to evaluate diverse data, the findings of experts and specialists in various fields; and they have to make their decisions intelligible to laymen of all kinds. In short, they have a task not unlike that of the geographer, and the skills and expertise developed by a geographical training should prove valuable in such work.

Finally, I would briefly mention that if the geographer chooses to work within any of the specialised

branches of the subject he can contribute as a specialist in his own right and without renouncing the general values of his basic training. The possible lines of usefulness are as varied as the subdivisions of geography, and are too numerous to explore here. It would, in any case, be inappropriate to enter into a prolonged eulogy on geography, but I hope I may have given some indication of both the nature of and the value of pursuing the geographer's fascinating and ever-changing task.

GEORGE KAY

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