THE COLONISATION OF THE GEOGRAPHICAL MIND: A CRITICAL CONTEXTUAL ANALYSIS OF THE INSTITUTIONALISATION AND ESTABLISHMENT OF GEOGRAPHY AS AN ACADEMIC DISCIPLINE IN SOUTH AFRICA

by

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I declare that **THE COLONISATION OF THE GEOGRAPHICAL MIND: A CRITICAL CONTEXTUAL ANALYSIS OF THE INSTITUTIONALISATION AND ESTABLISHMENT OF GEOGRAPHY AS AN ACADEMIC DISCIPLINE IN SOUTH AFRICA** is my own work and that all the sources I have quoted have been indicated and acknowledge by means of complete references.

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H M WESSO

June 1992

Dedicated to:

My wife, IONA

and my daughters, NADIA

AIMéE

KYLIE

CONTENTS

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SUMMARY

The existence of geography in South Africa, both as a school subject and as an university discipline, is fundamentally linked to the contribution it could make to schooling during the period of British colonial rule. Much of what we regard as our educational system today is derived from the way the country was colonised and from the social pressures initiated by colonisation.

Education during the colonial period was, initially, characterised by the central place of moral-religious principles in Dutch/Boer education, and later, the anglicisation of education under British rule. Of particular importance during the latter period, was the inculcation of empire sentiments. Empire education was seen to be important for two reasons: (1) to bolster Britain's world position by reinforcing the unity of the Empire; and (2) to inculcate in young people, especially the Afrikaner, an acceptance of their political position under British rule.

In the aftermath of the Anglo-Boer War (1899 - 1902) the British authorities realised that people could not be ruled by political force alone, but that the control of ideas played an equally important role. It was also necessary to colonise the minds of people, and the best way the ideology of Empire could be promoted, was to harness the educational system. Geography, as a school subject, was seen to be an important medium through

which imperial ideology could be inculcated in the minds of young people, and it was, therefore, moulded to serve the needs of the colonial rulers. Geography was thus made, not only in a physical and spatial sense, but it was also made in the mind.

Very little research has been done on the history of geography in South Africa. Especially in the present context of decolonisation, it is necessary also to decolonise our minds, and this begins with an understanding of how current thinking came to be. We cannot effect a process of change without first knowing how changes came about in the past. This study is, therefore, mainly concerned with the institutionalisation of geography in South Africa and in particular the process by which ideas, geographical ideas or ideas about geography, were imposed on people in order to justify imperialism. Firstly, the study shows how, with the intensification of British imperialist influence during the nineteenth century, geography was seen to be an important instrument in establishing British hegemonic control. Secondly, it is argued that the changing educational environment in South Africa during the early years of this century, prompted by socio-economic and political transformation, provided the basis for continuous British influence in geographical discourse and that this led to the introduction of the 'new' geography and, eventually, the establishment of geography as an academic discipline. Thirdly, it is suggested that the study of geography has always been a white man's domain, and that it conveniently served to teach blacks their place in society. In the light of the growing

debate regarding the decolonisation of education and scientific discourse in South Africa, this study also, in conclusion, briefly reflect on the decolonisation of geography.

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION

1.1 GENERAL BACKGROUND: THE HISTORY OF GEOGRAPHY AS A FIELD OF STUDY

Recent years have seen a significant increase in the number of books and articles published on the history of geography together with a more active and critical discussion and analysis of the subject. This interest has been greatly influenced by developments within the field of the history of science, and reflects a greater reapproachment between the history of science and the history of geography (Livingstone, 1984). The broadening of contacts between historians of geography and historians of science is according to Glick (1983a) the most significant development, as the history of geography has previously been too isolated to contribute significantly to the intellectual debate regarding the historiography of science. As Aay has noted: "practitioners of the history of geography within the discipline, whose working and teaching primarily rendered an 'in-house' service (that of supporting required courses), had for too long been sheltered from precisely those intellectual currents most material to its academic independence and maturity" (Aay, 1978, p. 4). In the light of this it is perhaps necessary to reflect briefly on the history of science. As an autonomous academic discipline, the history of science is a relatively new field

which has been institutionalized during the early fifties of this century. Until the nineteen fifties the history of science was practised within the confines of the respective sciences: "It served to introduce students to their discipline and was often written as a chronicle of incremental positive achievements primarily related to the then-present state of knowledge" (Aay, 1978, p. 35). It has been written by scientists who have often tried to legitimize a particular view of science. This kind of history is descriptive and is mainly concerned with the "what" and "when" of historical occurrences. Kragh warns that, "History ought also to be explanatory. A pure description of the past will not qualify as real history but is somewhat condescendingly called chronicle writing" (Kragh, 1987, p. 60).

Since the late 1970s a "new" history of science has gradually emerged. It is more explanatory and it is based on the belief that institutional and socio-economic factors are important for understanding the development of science. Many historians of science have always underplayed the importance of non-intellectual aspects of culture to the historical developments they consider. It was argued that the consideration of non intellectual aspects of culture (for example economics or politics) would be a denial of the integrity of science itself.

While great strides have been made in the history of science, the history of geography remained a relatively underdeveloped field of research. According to Smith, "The history of geographical thought, as it is traditionally called, should by

any and all standards be one of the most intellectually stimulating branches of the discipline. Instead it is the most retarded" (Smith, 1988, p. 10). Apart from its previously isolated existence, there has been a disturbing lack of interest among geographers in grappling with the history of their discipline. This lack of interest can be ascribed to various reasons. Smith (1988) concludes that the problem lies with the way the history of geography is taught and is of the opinion that the traditionally compulsory "thought" course is often the biggest waste of time. According to Smith (1988) the blame lies not so much with the teachers and even less with the students, but with the historians of geography and especially with the discipline as a whole which has not yet fostered a serious and broad based concern with its own history: "To put it bluntly, too much of what currently passes for the history of geographical 'thought' is characterized by what I would like to call the three D's ... it is, with few exceptions descriptive, dull and defensive" (Smith, 1988, p. 7). It is descriptive in the sense that it too often takes the form of reciting book and article titles with their applicable dates, appointments and promotions, and any other meritorious deeds and honours of the "great men" of geography. The history of geography is dull, because it is too much concerned with detail while there is little or no attempt to connect the strained details of a life to larger historical events and thereby to give them meaning. It is defensive because it is too often an internal history "where the activities and careers of Geographers are interpreted as if their significance began and ended within the microcosm of the few

thousand professional geographers" (Smith, 1988, p. 10).

The lack of critical engagement with the history of geography has also been referred to by Aay (1978), more than ten years ago when he concluded that (1) the history of Geography has been overly dependent on external conditions within the discipline. The commitment to present-day affairs and a lack of philosophical debate during the second quarter of the twentieth century, for example, made the history of geography quite unessential, (2) it has served as a dependency of the philosophy of geography and of the research praxis, i.e. that many disciplinary histories of geography have been written more as textbooks for teaching than as independent scholarly works important in their own right. Aay (1978) expressed his concern about this state of affairs particularly in view of the fact that, "Despite several pleas for its cultivation, the history of geography continues to be an obscure field within the geographic profession" (Aay, 1978, p. 3). However, seven years later Glick reported that, "There are manifold signs that the history of geography has come of age as an independent subdiscipline" (Glick, 1983b, p. 95). For visible proof of this he quoted Geoffrey Martin's "History of Geography Newsletter", the success of "Bibliographical Studies" and other activities of the IGU's commission on the history of geographical thought (established in 1968), the emergence of geographers who practice the history of Geography as an exclusive interest, joint appointments, in geography, of historians with a strong interest in the history of Geography, large scale specialized symposia on the subject, and the broadening of contacts between historians

of geography and historians of science. It is not only important that the history of geography should be established as a subdiscipline in its own right, but we should also be "moving our historical understanding of geography beyond the personal and anecdotal, and in the conviction that a new history of geography was on the agenda" (Smith, 1988, p. 11).

It is therefore important to focus briefly on why an interest in the history of our discipline should be developed. If we are going to make any sense of the position we are in now and any kind of trajectory we may take in the future, we have to have a clear sense of how we get to this state - in other words, what our past actually has been. According to Harvey (1984) the present condition of geography and proposals for its transformation must be grounded in the understanding of its history. Claval (in Aay, 1978) identified two fundamental tasks for the history of geography, each derived from its primary role as an instrument of critical thought: (1) to contribute to theory building and research work, and (2) to help solve philosophical questions especially at disciplinary turning points. By a proper analysis of the history of Geography, according to Stoddart, "we seek to understand how geographers as individual scholars recognized and grappled with intellectual issues in their time, in specific intellectual, social and economic environments" (Stoddart, 1986, p. 3).

While geographers, according to Smith (1988) have long complained that they are sadly misunderstood and that no-one does capes and

bays or capital quizzes any more - trivial pursuit geography - they are, in fact, by an apparent unending hagiography of heroes, contributing to the trivialisation of geography: "The history of geography could be an intellectual emblem for the discipline, encouraging historians, social theorists and natural scientists, to investigate further, but when it is characterized by the three D's, it conveys to otherwise interested intellectuals the unfortunate impression that there is little substance here" (Smith, 1988, p. 5). In our endeavour to understand the history of our discipline, it is, therefore, important that the philosophical, religious, ethical, political, economic, and ideological factors which have been assumed and promoted in geographic practice be made known and openly discussed.

1.2 PROBLEM FORMULATION

The focus of this study centres around the history of geography as an academic and intellectual enterprise and it finds its justification in the above context. The history of geography in South Africa is a field of research which has been totally neglected by South African geographers. While a few studies have been undertaken to specifically investigate the history of school geography, no in-depth analysis exists of any aspect of the history of academic geography. The need to come to terms with the history of disciplines in South Africa is reflected in research recently undertaken in the fields of sociology (Groenewald, 1984) and criminology (Van Zyl Smit, 1989). Both Groenewald (1984) and

Van Zyl Smit (1989) indicated how the interrelationship between research practice and social context enhanced the process of the institutionalisation of their respective disciplines. The lack of research on the early history of geography in South Africa has prompted the decision to undertake this study and to investigate the process by which geography became an institutionalised discipline as well as the way it has been established at the various South African universities. It was initially envisaged to research the impact of Apartheid on the development of geography as an academic discipline. However, it was soon realised that such research would be futile in view of the total lack of information on the South African roots of the discipline.

This research is, therefore, generally aimed at, (1) encouraging South African geographers to become more self-consciously critical about the historiography of their discipline, and (2) arriving at a clearer understanding of the place and function of geography in the South African society. Like all institutionalised disciplines, the discipline of geography reflects basic concepts, principles, and themes which are dependent not only on the internal logic of the discipline but also on the interaction between this logic and broader societal factors. The societal context of the discipline of geography, the nature of its origins and institutionalization, the values and philosophies of its scholars, and its reactions to socio-political and economic demands are thus worthy of thorough investigation. By examining these issues within the South African

context, it should be possible to arrive at a deeper understanding of the formation and evolution of the philosophy and methodology of geography as well as possible underlying biases.

Geography is a social product or, more specifically, a social institution. For any institution to be created, according to Taylor (1985), there must be a need and as needs change the institution has to adapt to survive. If we, therefore, accept that "the history of our discipline cannot be understood independently of the history of the society in which the practices of geography are embedded" (Harvey, 1984, p. 1), then it makes sense to look at the history of geography in South Africa in terms of both the "creators" and the societal need they imagined geography could fulfil. It has frequently been observed that nineteenth century European imperialism was sustained by European scholarship about the colonial world (Heffernan, 1991). A connection has also been drawn between the rapid development of geography as a discipline, particularly after 1870, and the political and intellectual climate of aggressive imperial expansion which also developed within Europe during the last decades of the nineteenth century. During this period South Africa was not a coloniser, but it has been colonised. The British were actively seeking to establish hegemonic control, and it is within this context that geography was introduced as a school subject and later as an academic discipline. The purpose of this study is, therefore, to examine the connections between South African geography and British

imperialism. It is hoped that, by doing so, it should be possible to throw some light on the process by which geography became an institutionalised discipline in South Africa.

In general this study is a study in the history of ideas; more specifically, it is an exploration of how, when and why geography was established as an academic discipline in South Africa. In particular the study attempts to identify the political and the social context and purpose of the subject. It endeavours to understand the institutionalisation and establishment of geography in South Africa in social terms.

1.3 THEORETICAL AND METHODOLOGICAL FRAMEWORK

1.3.1 Towards a theoretical conception

Apart from all the efforts of developing a suitable theoretical and methodological framework, the history of geography remains largely hermetic, which can be ascribed to its lack of involvement with history and social theory. To move away from, what Smith calls trivialised history "that garners little respect either inside or outside geography ... geographers will have to be ruthlessly critical - their own best critics - in assessing the history of geography ..." (Smith, 1988, p. 7). The history of geography ought to be contextualised and it must reflect the impact of the socio-economic and ideological forces which operate in society. While agreeing that geography could be thought of as

a social practice, Livingstone (1991) reminds us that geographic thought is not to be considered a mere epiphenomenon of society, but that theory is always located in social and intellectual circumstance. He speaks of situated theory. This, according to Livingstone (1991), means that it would never be wrong to ask of any theory (or discipline for that matter) questions such as the following: Why was it put forward? Who benefited from it? Whose interests did it advance or retard? In what kind of cultural and intellectual arena was it conceived and communicated? How adapted was it to its conceptual and social environment?

The impact of society on the development of science was, in the Western world, for the first time seriously considered at the Second International Congress of the History of Science and Technology in London, in 1931. At this congress the Soviet delegation, headed by N. Bukharin, put forth its view on the history of science and confronted Western historians with a sustained Marxist treatment of social and economic factors as elements in scientific and technological development (Bukharin, 1971). One of the most outstanding Soviet contributions was Hessen's paper on: "The Social and Economic Roots of Newton's 'Principle'" (Hessen, 1971). Until this time Newton was regarded in the traditional history of science "as so great a genius that he could not have been influenced by his environment at all, and certainly not by a sub-conscious appreciation of the needs of the society of the rising bourgeoisie of the 17th century" (Needham, 1971, p. viii). In his paper, Hessen produced a veritable manifesto of the Marxist form of externalism in the history of

science. The main thrust of his argument was that Newton had not lived his life in a vacuum, that he had been aware of the practical needs of the early capitalist society of his time. This argument initiated the externalist/internalist debate that is still with us today, namely those who feel they can decry profound influences of social structure and social change upon science and scientific thought and those who prefer to think only in terms of an internal logic of development powered by intellectual giants of mysterious origin (Needham, 1971). At the same conference Rubinstein was, for example, arguing that modern science and modern technology are the offspring of capitalism, that "the purpose and the motive power of capitalist production is the derivation of profits. Whatever the priests of pure science say about profanation, we must observe that under the conditions of capitalism, science as well as technology, whether consciously or unconsciously, serve the interest of capitalist profit" (Rubinstein, 1971, p. 46).

Apart from a few young Marxist academics, mainly natural scientists, who eagerly embraced the Russians' ideas, Marxist historiography failed to become a viable historiographic alternative. Werskey (1971) provides three possible reasons: (1) the subtle forms of political intimidation, during the Cold War era, which operated within the scholarly world to the detriment of a developing Marxism, (2) Marxists who were interested in the history of science always worked from a weak institutional base, in the sense that they were never in a position to train a new generation of professional historians of science, and (3) it was

only since the early sixties, after the history of science has emerged as a distinct academic discipline, that systematic attempts have been made to consider science and technology as agents and products of social change themselves.

The little impact that Marxist historiography had, may also be ascribed to its espousal of a simplified and reductionist form of Marxism. Young (1973) argues that practitioners of Marxist historiography viewed the concepts and findings of science as rising directly from the socio-economic base. Little or no attention was directed to the intervening process linking science to this base. He is of the opinion that both ideas (and also science for that matter) and their institutionalisation must be viewed in terms of their historical place in social and economic life and their ideological role in maintaining existing social and economic relations by rationalising them. A similar view is expressed by Shaw as far as the social sciences are concerned: "... there are indissoluble practical bonds between the social sciences and the very material structure of modern society" (Shaw, 1975, p. 2). Shaw (1975) argues further that modern capitalist society does not consist simply of the material structures of the mode of production, the state, higher education and other social spheres, but that it also includes a mental world. Social science is not a unitary phenomenon, but it is a component of distinct material and intellectual structures and could have ideological content: "The separation of thought as 'pure' (and hence 'non-ideological') is in fact a hallmark of ideology. For thought is always the thought of men, i.e of

practical beings" (Shaw, 1975, p. 64).

The theoretical and methodological debate, as far as a contextual and critical history of geography is concerned, has scarcely begun. Asheim (1979) was one of the first geographers to introduce Marxist ideas into the history of geography. He addresses the question whether social geography has an ideological or critical function in society. He approaches this question from different perspectives, one of which is the history of ideas. The above question, according to Asheim, "ought to be a basic problem for all who have taken issue with the uncritical acceptance of the 'ideals' of positivism, the supposed objectivity of science and the neutrality of values, and come to realise that research in science does not take place in a social vacuum separate from social processes and their contradictions" (Asheim, 1979, p. 5). More specifically, according to Asheim (1979) this implies that social scientists, in undertaking research, do not only disclose or obscure conditions in society but that they also simultaneously and actively influence the processes that are being researched.

Realising the fact that the history of thought in any one subject can be written in a number of ways, Asheim chooses to focus on a historical materialist approach, "which stresses the importance of examining the relations linking science to the rest of society ... where the relations between science and society are considered to be dialectical ... In the end, however, it is the material conditions of society that will provide limits on what

ideas, and what type of research, is possible or at least acceptable" (Asheim, 1979, p. 6). However, he warns against the mechanistic analysis of the interrelationships between science and society as science develops an important relative autonomy from its basis in society. Livingstone echoes this concern, albeit in a post-modernist mould, and maintains that the conventional distinction between text and context needs to be transcended:

> "As I see it text and context are inextricably intertwined in disciplinary history. Thus it is not just that the social context explains the geographical texts, or even contextualises them. Contextual approaches to intellectual history have frequently been little more than an apologia for a politicised reductionism that accords explanatory privilege - frequently in an unexamined fashion - to the socio-political domain. What we need, I believe, is something far less reductionist and far more symmetrical, a greater sense of how texts and contexts are constituted reciprocally. For defining what constitutes geography's intramural domain - the text - in part determines what composes the extramural space - the context. What too few historians of geography have engaged, I believe, is this very question of just how the reciprocity of text and context is to be understood" (Livingstone, 1991, p. 4).

Young (1973) also suggested that we set aside the "internalist-externalist" dichotomy in the historiography of science and that we consider going beyond the marxist base-superstructure model to a far richer and more subtle theory of mediation, moving toward a theory of totality.

Much of the work done with a Marxist perspective is stressing the socio-economic condition of an epoch in order to explain the development of disciplines or the emergence of new scientific

ideas. Although it has the merit of asking new questions of exploring the place of science within the total structure of society it can, according to Berdoulay (1981), be criticised for not having the ability to establish precise relationships between general socio-economic conditions and specific, internal development of a science.

A critical, contextual historiography of science should go beyond simplistic approaches and be based on a sufficiently flexible theory of mediation between socio-economic base and intellectual superstructure:

> "... the development of a theory of mediation which moves towards a concept of totality in which man, nature and society are seen in fully relational terms. Rather than abandoning the history of ideas it is important that both ideas and their institutionalisation continue to be given serious attention. But this must be done without losing site of their historical place in social and economic life and their ideological role in maintaining existing social and economic relations by rationalising them" (Young, 1973, p. 347).

To capture the complex interrelationships between science and society, Granö (1981) argues that science is linked with the scientific community through research praxis, which is the achievement of scholars' intentional action and which is therefore connected to the social environment. In this way the union of the internal cognitive history and the external social history of science is brought about. Granö (1981) (Fig. 1) shows that geographers are a sub-community within the community of

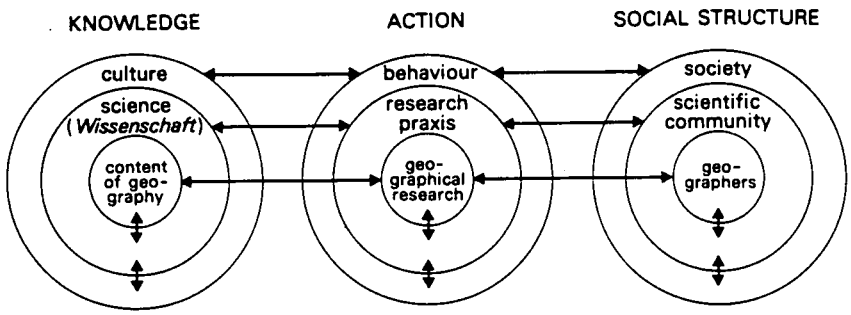

FIGURE 1 : THE CONTEXT OF GEOGRAPHY (Granö, 1981)

scientists, which is itself a subset of the wider society; that society has a culture, including a scientific culture within which the content of geography is defined. Action is underpinned by the structure of society and its knowledge base: research praxis is part of this programme of action, and includes geographical research. On the basis of this model, Granö (1981), viewed Geography in essentially three ways: (1) an originally unorganised body of knowledge from which has developed the **scientific content** of geography, (2) practical action, from which **research praxis** has evolved, and later (3) a social institution, a **discipline.**

It is this process of institutionalisation which is the concern of this study. The fact that geography is a relatively young discipline in South Africa, as well as the fact that no substantial research has been done as far as the history of geography is concerned, leaves the researcher with a myriad of

methodological problems, some of which are discussed in the following section.

1.3.2 **Methodology**

Since geography, as an institutionalized discipline in South Africa, has a very short history, it is considered appropriate to highlight some of the problems which are generally experienced in writing a contemporary history of science. This will provide the methodological context within which this study should be evaluated. Kragh (1987) identified the following major problems regarding a contemporary history of science: (1) it concerns living scientists. It is argued that the historian will find it difficult to achieve a sufficiently objective distance to his material and his analyses may be "coloured" by personal commitment, (2) in the case of controversial contemporary activities, such as politically controversial science, the commitment and personal situation of the historian will influence his writings, and (3) in contemporary history many sequences of events being studied will not have finished so that the historian does not know the result and is therefore unable to use it in his evaluation of the events. Problems such as these should, however, according to Kragh (1987), not prevent the historian of science from engaging in historical research of a contemporary nature. He argues that (1) the absence of innate objectivity in source materials is not confined to the present. On the contrary, the scholar of contemporary history has further

possibilities for checking the reliability of his sources. (2) The historian's subjective commitment is always present in good history, even when it is about earlier periods. (3) The notion that historical processes should first be concluded before they can be analysed is built on the false assumption that the historian must be in possession of some kind of answer sheet of those events capable of being analyzed historically.

In commenting on objectivity in writing the historiography of science Livingstone (1979) focused attention on two aspects that should be taken into account: all historiography of science involves (1) a process of selection, and (2) depends on the interpretation of the historian. As far as selection is concerned, "It is self-evident that historiography necessarily involves value judgments in that the historian of ideas must always participate in some form of selection. The historian never has access to all the facts, and even from those to which he does have access, he is forced to select those deemed significant in the light of the questions he is asking" (Livingstone, 1979, p. 228). In this regard, however, we should always be careful not to turn selectivity into distortion. Referring to interpretation Livingstone writes that, "The history of geographical thought is not merely a reconstruction comprising a compendium of quotations or an intellectual chronological tableau ... Interpretative explanation would seem to be crucial for any understanding of the development of geographical thought ..." (Livingstone, 1979, p. 230).

Objectivity is in the end not a historical problem, but clearly an epistemological one. Historical analysis is the only way we can gain proper insight into the actual dynamic of modern science. Our analysis should not, however, only be historical in the sense that it considers a science in its time dimension only: "The development process that historically integrates the discrete achievements, ideas and knowledge of the past, however, ought not to be imposed or assumed; it must emerge from careful historical analysis" (Aay, 1978, p. 249).

The underlying methodology in this research is linked to a critical contextual historiographical approach. It differs from the idealist method (as opposed to the materialist method), which proceeds by an analysis of ideas and avoids any direct confrontation with the social processes which produce them. As far as this research is concerned, it does not imply a reduction of the history of geography to base motives alone, but rather a constant awareness of the impact of ideological concerns.

The establishment of a pool of information on which to base this research has been a formidable task, mainly due to the fact that no secondary sources regarding the history of academic geography in South Africa exist. The following have provided the necessary information:

Archival and library sources:

government documents, university calenders, minutes of Council and Senate meetings at various universities,

university publications, publications of teacher associations and cultural organisations, publications on the history of South African universities, dissertations, obituaries.

Collections of individual university geography departments:

lecture notes, unpublished histories of departments, correspondence.

Personal interviews (oral history):

This method was especially aimed at the utilization of living persons who were involved in the institutionalization of our subject or who knew people personally who were involved (Appendix 1). This method allows the interviewer to reconstruct periods in the life history of particular geographers, as well as the content and nature of the discipline they taught. The method may be problematic in some instances especially in the sense that it is heavily dependent on the memory of the interviewer and it may only be a personal recollection of historical reality. Oral history must thus be seen as supplementary to other methods. It should, however, be mentioned that valuable information provided during interviews could not be incorporated in this study as many interviewees, because of the sensitive nature of the information, refused permission to be quoted. In other instances permission was granted, however, the information was found to be offensive.

1.4 RESEARCH OUTLINE

The research is presented in four sections:

Geography and its history:

Chapter 2 endeavours to categorise historical writing on geography. This is done so as to locate the research in terms of the historical mode of analysis. Chapter 3 outlines the history of geography on an international level, with particular emphasis on its European roots and endeavours to provide the necessary intellectual and academic context within which to evaluate the institutionalisation of geography in South Africa.

The pre-academic phase:

The institutionalisation of geography as an academic discipline was fundamentally linked to the status of geography as a school subject. Chapter 4, therefore, deals exclusively with the history of school geography, while Chapter 5 focuses on the status of geography during the late nineteenth and early twentieth centuries, with particular emphasis on the training of geography teachers. Chapter 6 relates to the foregoing in the sense that it concentrates on the role of geography in "Empire Education".

The institutionalisation of geography:

Chapter 7 deals with the institutionalisation of geography

as an academic discipline at the University of the Cape of Good Hope.

The establishment of geography at South African universities: Chapter 8 concentrates on the pioneers in academic geography and the establishment of a community of geographers, while Chapter 9 concerns itself with the nature and content of the newly established discipline.

Apart from being a summary, the concluding chapter, Chapter 10, provides a coherent analysis and evaluation of geography as a colonised discipline. It also endeavours to provide the context for a future decolonised geography.

2. GEOGRAPHY AND ITS HISTORY

2.1 INTRODUCTION

For decades the history of geography has attracted the interest of many scholars. Claval (in Aay, 1978) reviewed the history of geography and identified three distinct periods of scholarship: (1) critical scholarship and the history of geography (sixteenth to nineteenth centuries), (2) the philosophy and the history of geography (nineteenth to mid twentieth centuries), (3) the history of geography as an independent discipline (the present-day orientation). The interest in the history of geography has always been fuelled by either scholarly needs within society generally or needs which existed within the discipline specifically. Prior to the nineteenth century, interest in the history of geography can be related to critical scholarship during the time when the great revival of learning of the Renaissance gave strategic importance to the enumeration of sources as part of scholarly method. For geography, defined by its interest in exploration and cartography, this scholarly method also became important to scholars in geography. During the last quarter of the 19th century, geography became an institutionalised university discipline which resulted in the establishment of professorships in geography. The newly appointed professors were very uncertain about their status as geographers

and increasingly began to ask questions about the nature of geography and its place among the sciences. This disciplinary uncertainty led to the emergence of the functional alliance between the history and the philosophy of geography. In recent years, however, and in line with developments in the history of science, the history of geography is gradually shedding its functional role and is well on its way to establishing itself as an independent sub-discipline.

The history of geography, as an intellectual enterprise, has been dealt with in a variety of ways. An analysis of research regarding the history of geography has crystallised into four main categories of historiographical approaches: (1) textbook chronicles, (2) pluralistic histories, (3) histories within the context of Kuhn's paradigm model, and (4) contextual histories. The main purpose of this chapter is to highlight the more salient characteristics of the various approaches and to develop the academic rationale for having chosen the contextual approach in this study.

2.2 TEXTBOOK CHRONICLES

The most typical and well documented works of traditional histories of geography have been, what Aay (1978, 1981) calls textbook chronicles. Although not intentionally written as textbooks, their rather broad surveys of the accomplishments of pioneers in the history of geography, are very much textbook-

like in character. Various histories of geography, of the chronicle type, have been authoritatively analysed and discussed by Aay (1978)[1]. It is sufficient here to identify the main characteristics and shortcomings of textbook chronicles. A major concern of these histories is to integrate the content of sources into a coherent and continuous narrative rather than to carry out original research into the finer texture of the development process of geographic knowledge by sifting through primary sources. Another important characteristic is that they are mere in-house accounts. The historiographic influence of the writer's views on the nature of geography comes to light through streamlining the history of geography by prescriptive philosophies of geography: "This is made possible by combining an incremental view of disciplinary growth with a normative philosophical viewpoint. The first provides a mechanism for the growth of geographic knowledge, and the second, serves as a principle of selection and interpretation" (Aay, 1978, p. 87).

The textbook chronicles are also characterised by philosophical presentism. The history of geography is interpreted by means of a present-day paradigm and aims to furnish students with an

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[1]Aay's work is a detailed historiographical appraisal of the major English-speaking disciplinary histories in geography: Dickenson, R E (1969): *The Makers of modern Geography*. Praeger, New York.; James, P E (1972): *All Possible Worlds. A History of Geographical Ideas*. Odessy Press. New York.; Freeman, T W (1961): *A Hundred Years of Geography*. Aldine. Chicago.; Fisher, E, Campbell, R D and Millar, E S (1967): *A Question of Place*. R W Beatty. Arlington.; Dickenson, R E and Howarth, O J R (1933): *The Making of Geography*. Clarendon Press. Oxford.; Fusion, R (1968): *A Geography of Geography*. Wm C Brown Co. Dubuque, Iowa.; Warntz, W and Wolff, P (1971): *Breakthrough in Geography*. New American Library. New York.

understanding of the current theoretical and philosophical debates in their field of study. It studies the past only with direct reference to the present and with a very strong emphasis on chronology, cumulation and continuity. Stoddart describes it as follows: "Scientific advancement is seen as passing relentlessly forward towards the present, and issues such as priority in discovery or publication loom large as criteria of significance" (Stoddart, 1986, p. 5). A major shortcoming of textbook chronicles relates to the scant attention given to thorough analyses of the processes of change and the development of ideas. The intellectual milieux of scholars are never seriously considered. Religious, technical, social, ideological, and economic contexts are dealt with, if at all, in a very superficial way. In most cases such contexts merely provide a general background to the concepts, theories and findings of geographic science.

2.3 PLURALISTIC HISTORY

The pluralistic approach concerns the identification of several geographic "traditions" or "streams" and their evolution throughout history: "it had the merit of rejecting the idea that some trends are scientifically superior to others, and the empiricist belief that scientific theories emerge solely out of facts" (Berdoulay, 1981, p. 9). It followed that, for the historian of science, the emphasis was still on continuous development of ideas, but all past scientific trends were

considered worthy of investigation. The employment of this approach in writing the history of geography is best illustrated in Pattison's (1964) work on "The Four Traditions of Geography". He argues that throughout the modern history of geography it has dealt with at least four central traditions, namely (1) a spatial tradition, an (2) area studies tradition, (3) a man-land tradition, and (4) an earth science tradition. Although this view on the history of geography was more sophisticated than those expressed in the textbook chronicles, it still kept ignoring the issues of discontinuities in the evolution of ideas, the interplay among the various scientific trends or traditions, the actual conditions of what research was about in the past and the factors of change that were not "internal" to science (Berdoulay, 1981, p. 9).

Since the mid 1960s development in the history and philosophy of science, and especially the publication of Kuhn's seminal work "The Structure of Scientific Revolutions" (1962), prompted geographers to look anew at the history of their discipline. The following section deals very briefly with the relevant issues regarding Kuhn's paradigm concept and the way it was employed by geographers to produce a better understanding of the history of their discipline.

2.4 THE HISTORY OF GEOGRAPHY WITHIN THE CONTEXT OF THE KUHN'S PARADIGM MODEL

Although several approaches to the study of disciplinary history have been advanced in recent years, e.g. Popper's (1963) normative model of conjectures and refutations and Lakatos's (1981) concept of research programmes it is clear that the work by Kuhn (1962, 1970) on "The Structure of Scientific Revolutions" has been by far the most popular. More than any other approach it was Kuhn's (1962) ideas on paradigmatic change, that found their way into geography during the second half of the nineteen sixties. It is because of its popularity among geographers that Kuhn's model and its application in researching the history of geography is emphasised here.

The "paradigm" concept, never clearly defined by Kuhn, sets the framework within which a science proceeds by indicating: first, the accepted facts, second, the puzzles which remain to be solved, and third, the procedures by which solutions to the puzzles are sought.

Kuhn argues that scientific change within a discipline is patterned into alternating periods of normal science and periods of intellectual upheaval (revolutions). Normal science is characterised by widespread consensus among scientists relating to the nature of their discipline. It involves puzzle-solving activity which leads to new facts on which further queries are based. It can happen that some puzzles cannot be solved by the

accepted procedures or that solutions to new problems are at variance with the accepted facts. In such situations these puzzles and solutions are set aside as anomalies, which as yet the specific paradigm cannot account for. A very important characteristic of paradigm-based or "normal" science is the fact that change is additive or cumulative in the sense that it consists of extensions and elaborations of the initially successful exemplars and techniques.

Eventually, however, the anomalies accumulate to such an extent that alternative, more successful paradigms are sought which will incorporate both the acceptable facts and unresolved "puzzles" and will provide a set of procedures which allows for the solution of the previously insoluble. When such a situation is reached the prevailing paradigm would be replaced by a new one. Acceptance of this new paradigm, by all practitioners of the particular science, involves then a revolution in scientific thought. Such revolutionary scientific change is intrinsically non-cumulative and discontinuous: "This process of paradigm change thus supplied a key to the interpretation of historical development in the sciences : Change came to be seen as episodic, or indeed 'revolutionary'. With a change in paradigm, old problems lost their significance, old methods their relevance, and the focus of research moved abruptly to new areas" (Stoddart, 1981, p. 6).

A very important contribution by Kuhn to the debate regarding scientific advancement is his concern for the social dynamics

of scientific change and the social-cognitive nature of science in general. His emphasis is especially on the role of scientific communities in the scientific product. He stresses that members of such a community may take "leaps of faith" when they discard one paradigm in favour of another. This means that there are also factors other than those concerned with the internal logic of science when it comes to scientific advancement. The investigation of disciplinary communities in which scientists work is therefore a necessary beginning point in order to understand science.

Although Kuhn's concept of a paradigm is, according to Johnston (1978), partly sociological, it pays too little attention to the nature of conflict within an academic discipline, and how such conflict, notably that between generations socialised into different schools of thought, is countered and accommodated. Neither does it consider the wider social environment in which science is situated. It stops short of placing science in its total societal context.

Since the mid 1960s geographers have made widespread use of Kuhn's (1962) concepts of paradigms and revolutions to discuss the development of geographic thought: "Like other social scientists, human geographers have had a field day applying Kuhn. They have identified a plethora of "revolutions" - enough ... to make geography the Latin America of the social sciences" (Glick, 1983b, p. 95).

In the geographic literature reference to Kuhn's work appears in two forms: (1) it defends certain epistemological positions and promotes particular views in geography, and (2) it uses Kuhn's ideas for interpreting the history of geography, i.e. to identify geography's paradigms and revolutions. Examples of studies with the latter approach is the work done by Harvey and Holley (1981), Holt-Jensen (1982) and Johnston (1978, 1979). Harvey and Holley (1981) identify five paradigms (exemplars) in geography, namely Ratzel's Anthropogeography, Vidal's Tableau, Sauer's Morphology, Hartshorne's Nature and Schaefer's Exceptionalism and briefly describe each of them. They try to use Kuhn's (1970) improved concepts but obtain no better results (Claval 1982).

Although Holt-Jensen (1988) is critical about the usefulness of Kuhn's work, it nevertheless forms the basis for his understanding of the development of geographic thought. He is using the Kuhnian model to search for geography's paradigms and revolutions. He maintains that "environmental determinism" was the first to bring "paradigm status" to geography and that it is very difficult to identify any dominant paradigm after that. He concludes that the Kuhnian model has little to offer geographers since it does not describe geography's history adequately. He concurs with Stoddart's (1981a) view that the recent identification of paradigms has been largely for polemical purposes.

Johnston (1978, 1979) compares the Kuhnian model and the recent

history of human geography, and discusses the conceptual shifts in Anglo America human geography. He identifies six geographic paradigms : exploration, environmental determinism, regionalism, spatial science, behaviouralism and radical/structural geography. He questions whether these are true paradigms, but eventually concludes that the Kuhnian model is inadequate, since the behavioural revolution was really an evolution and the radical views have not been widely accepted.

Apart from the critical comments by the above mentioned authors, several other geographers also criticise the application of Kuhn's model of paradigms and intellectual revolutions to the history of geography. According to Aay (1978) paradigms, (1) do not govern geographic inquiry as pervasively and as monochromatically as Kuhn supposes, and that, therefore normal science is also marked by a certain amount of theoretical in-fighting, (2) revolutionary change does not represent an incommensurable break with the past but is an important avenue of historical and logical continuity. Stoddart (1986) cited the "quantitative revolution" as a point in case. He regards it as a process involving a shift in emphasis rather than the wholesale replacement of one set of attitudes by another, and (3) research programmes may run into the sand not so much because of anomalies that cannot be covered by the paradigm, but rather, for example, because they are empirically worked out and no longer lead to a new knowledge, or because they are overtaken by larger disciplinary developments or because they cannot withstand hardhitting criticism from cognate specialities.

Criticism is also levelled against those geographers who have employed Kuhn's model. Several authors have expressed misgivings about the eager and often uncritical manner in which geographers have applied Kuhn's notions to their subject. According to Stoddart (1986, p. 9) Kuhn's vocabulary has occurred without any close attention to his own statements or to the critical literature on them in the history and philosophy of science, so that "Kuhn's framework has distorted even perverted the development of geography ..." (Wheeler, 1982, p. 1). Johnston (1981, 1987), for example, also found that virtually all references to Kuhn in geographical literature are to the first edition of "The Structure of Scientific Revolutions". In this regard Mair (1986) argued that despite the volume of work dedicated to Kuhn, his ideas have been seriously misunderstood, and therefore improperly evaluated, by geographers: "Neither those who have embraced Kuhn nor those who have rejected him have paid sufficient attention to the context and to the content, and therefore to the meaning of his underlying project for study of science. This uncritical appropriation of Kuhn's ideas has had unfortunate consequences for our understanding of geography, since Kuhn has a great deal more to offer geographers than is generally recognised" (Mair, 1986, p. 345). According to Mair (1986) the later Kuhn has made a very real contribution to a sociological understanding of change in science, for example, his references to scientific communities, his refusal to separate scientific knowledge from the practice of science: "For Kuhn, the rationality of belief was to be sought in the social construction of the scientific community. A pre-requisite to understanding

scientific knowledge became a sociology of science ..." (Mair, 1986, p. 352).

Mair (1986), however, admits that Kuhn's "sociological understanding" of science is not only positivist (see also Johnston, 1987) but also very limited in scope in the sense that he does not put science in the total societal context. In addition, the revolutionary model says nothing of the ways in which change is affected, i.e. why some views appeal to particular individuals and others do not, why some workers in some localities are attracted by, adapt and transmit new ideas (Stoddart, 1986). If issues like these cannot be answered by the Kuhnian model then "It follows ... that the adoption of Kuhn's terminology, far from clarifying history, actively distorts it, largely by reducing the participants to caricature figures ... - some very clearly become heroes ... supporters of the old paradigm readily become fools, if not knaves"(Stoddart, 1986, p. 25).

Realising the impact of external factors on the development of science, some geographers found it necessary to extend or re-evaluate the Kuhnian Model. Concerned with the contemporary history of geography and his conclusion that Kuhn's model cannot be applied, Johnston (1987) attempted to devise an alternative model in order to come closer to the social reality of a social science. However, his model still incorporates "... the notion of a paradigm, as an accepted method of working on a particular type of problem, but [he] does not argue that such paradigms

'take over' a discipline through revolutionary activity. Instead their 'take over' occurs by stealth and often relatively slowly" (Johnston, 1987, p. 203). To provide a framework for his analysis he moved further into the sociology of science than has been typical of other commentaries on the changing nature of human geography. Because of the interaction between the external environment and an academic discipline Johnston argued that a multi-paradigm situation was to be expected and that a model was needed to describe this (Johnston, 1987). His model is based on a general notion of academic generations in social sciences in which the external environment sets the requirements for the activities of social science disciplines. At certain times the nature of the external environment and its requirements changes. These changes are then embraced by a minority of established members of the social science discipline and by associated members of the youngest generation of research workers. Together they create a new "school of thought" or an opposing "school of thought" presenting alternative reactions to the changed environment. These new school(s) are then co-opted into the career system with a take over of academic journals. During a phase of paradigm unease, younger adherents come to dominate as older generations retire. This model according to Johnston, " ... seems better able to account for the changes in human geography since the Second World War than Kuhn's and would appear to offer a reasonable base of further investigation of the discipline's contemporary history" (Johnston, 1987, p. 203).

For Kuhn, the rationality of belief was to be sought in the

social construction of the scientific community. Johnston's model is therefore, according to Mair (1986) not really an alternative, "... the sociology of science is of course, entirely in keeping with Kuhn's underlying structures and follows Kuhn's analysis exactly" (Mair, 1986, p. 358; see also Kuhn, 1970). It is against this background that Mair (1986) proposes his "Sociology of Geography", to investigate the paradigmatic disciplinary communities in which geographers work. However, Mair (1986) is fully aware of the limitations of Kuhn's work and argues that "... Kuhn's neglect of the links between science and society at large is obviously something of a lacune in his project, but that his direction of our attention towards sociological issues should be well taken" (Mair, 1986, p. 362). Harvey (1973) echoes these concerns by arguing that ".. the wider society in which science is immersed is of far greater importance in explaining scientific change than Kuhn allowed" (Harvey, 1973, p. 122).

2.5 SOCIAL CONTEXT AND THE HISTORY OF GEOGRAPHY

An alternative way of looking at the history of geography was recognised more than 65 years ago by John Kirkland Wright in his articles, "The history of Geography: A Point of View" (1925) and "A Plea for the History of Geography" (1926). In the latter article he wrote that "the history of geography ... is the history of geographical ideas" (Wright, 1926, p. 477), emphasising the social and intellectual context of problem formulation and theory development. This view regarding the

history of geography was, however, never taken seriously by the historians of the discipline. During the nineteen sixties Claval held similar views and also wished to enlarge the scope of the study of geography's past by introducing into the history of academic geography a greater consideration for the professional, intellectual and societal milieu of geographic knowledge. In his "La Peuse'e Geographique : Introduction a sou historie" (in Aay, 1978) he deals with (1) the social conditioning of geographic knowledge especially the influence of ideology and scientific milieu, (2) the effect of imperialism and liberalism on the development of economic geography, and (3) the professionalisation of geography in the 19th Century. In his analysis of Claval's work on the history of geography, Aay (1978) came to the conclusion that his work is not merely a chronological listing and description of sources as is often the case, but rather, that the evolution of concepts and theories is related to contemporary scientific paradigms and **Zeitgeists.**

It was, however, only since the late nineteen seventies that geographers started to seriously consider the contextual origins and development of their discipline. This provided the impetus for a "new" history of geography emphasising a commitment to processes and explanations and focusing on external influences in the development of geography. Writing towards the end of the previous decade Aay was of the opinion that "When we teach undergraduates the history of our field, we offer for their admiration highly respected ancestors like Strabo, Humboldt and Ratzel. The role of commerce and politics in extending the sheer

mass of geographical knowledge tends to be swept under the carpet" (Aay, 1978, p. 257).

According to (Aay, 1981) there are mainly two reasons why the extra-scientific milieu did not feature in the histories of geography: (1) understanding the development of science within the societal context is far more demanding than chronologically cataloguing scientific achievements. It requires both a knowledge of the conceptual, methodological, and empirical content of past geography and a knowledge of the social, political, economic and religious factors impinging on that content; (2) the widespread attachment to the idea that science and scholarship are (or should be) autonomous, guaranteed enterprises. This has perhaps led us to picture geography's past as one of proceeding, quite independently from intellectual triumph to intellectual triumph: "That our supposedly autonomous professional past has been deeply influenced and compromised by commerce, colonialism and politics is not something we would want to highlight" (Aay, 1981, p. 298).

Why then is there the present engagement with writing a "new" history of geography. According to Glick (1983a) there are basically two answers to this question: (1) because philosophical uncertainty is a major stimulus to historical soul searching within a discipline, Glick argues that the crisis of neo-positivist geography has been the main stimulus to recent historical interest, and (2) that investigating geography's historical roots is related to the growing importance of theory

within geographical discourse. This has greatly enhanced the involvement of many geographers over the past ten years in a reconstruction of the history of geography.

Hooson's article of 1968, " The Development of Geography in Pre-Soviet Russia", is one of the earliest articles to address the contextuality of the history of geography. The article is primarily an attempt to appraise the life and work of the more significant geographers, their impact on the character of the subject and their relation to their historical and intellectual milieu. The development of geography in pre-Soviet Russia is viewed against the background of the intensification of West European influence in the late 18th and early 19th Centuries, alongside growing national consciousness and a gradual replacement of foreigners by Russians in the various scientific and educational institutions. "In this changing climate of reforming ideas and reaction to them, geography, especially regional and economic geography, was regarded as an important instrument for progress and, as such, many of the leading thinkers and reformers paid particular attention to the subject" (Hooson, 1968, p. 254). It was during the period 1880 to the First World War that geography experienced its golden age in Russia - a period, according to Hooson (1968), in which geographers like Voeikov Dokuchaev and Anuchin produced most of their important work. In Russia this was a period of accelerating rates of economic growth, extensive exploration, and colonial conquest, as well as settlement of the open spaces, railway-building on a continental scale, and expansion of international

trade. Voeikov's work on agricultural climatology was close to his heart not only from a scientific viewpoint, but also because of his concern for agricultural improvements in Russia (Hooson, 1968).

Several years later Berdoulay (1974), a student of Hooson's, produced the first comprehensive contextual history. He investigated the emergence of the French school of geography within the period 1870-1914. In order to do this research he devised a contextual approach which emphasises the social dimension of scientific activity. Particular attention is given to the process of the institutionalisation of geography in the university system and to the strikingly unequal success of various ways of geographical thought in attaining this status. The significance of these trends is assessed through the investigation of their socio-political background and ideological orientation. In order to identify the geographers' ideological orientations (and circles of affinity), the societal context is reviewed. The reaction of the various scholars to major issues is analysed because it reveals ideological preferences and distinct circles of affinity. The issues selected are: the German challenge, the colonial movement, the reform of the educational system, and the search for a secular republican morality. The response of the various geographers to these societal issues affected the degree of institutionalisation obtained by these systems of thought. The study clearly shows the interrelationships between particular ideas, level of institutionalisation, and place in the ideological spectrum of

the time. The success of the Vidalian school of geography can for example, be ascribed to the fact that it developed a school of thought which epitomised their ideological milieu, i.e. the similarity of their thought with French idealist and neo-Kantian philosophers.

The contextual approach, according to Berdoulay, "serves as a comprehensive framework for analysing the conjunction of the inner logic and content of science and the context in which the scientist is placed. It is by disentangling the links which unite change in geographic thought to its context that one is in the best position to assess, and to learn from the creative contributions of great individuals" (Berdoulay, 1981, p. 14). He formulated his contextual approach along a set of methodological guidelines: (1) that changing systems of thought exist at the same time as there is continuity of certain ideas, and that there is no radical dichotomy between internal and external factors of scientific change, (2) no geographic trend should be neglected, even if some of them acquired no posterity, (3) the identification and in-depth study of the major issues which concern a society are necessary, even if some of them may not at first glance, seem to have influenced the evolution of geographic ideas, (4) as geographic trends have some sociological basis, it is important not to adopt a concept of "scientific community" as is often found in the sociology of science but rather a circle of affinity, and (5) the approach consists less in examining the possible influence of an idea than in looking at the reasons behind the demand, or use of, that idea. Berdoulay (1974, 1981)

significantly contributed to our understanding of the history of geography in social terms. However, his approach is lacking in the necessary critical engagement with economic reality, an aspect that will be briefly dealt with below.

In a recent publication Stoddart (1986, p. 18) introduces Gramsci's concept of "Hegemony" into the history of geography. Hegemony describes the maintenance of cultural supremacy by particular groups in society and it involves the reciprocal components of dominance and subordination, control and defense. Introducing the idea to the history of science, Morris Berman suggests that, "the evolution of the English scientific community becomes understandable only when seen within the framework of the cultural imprint of the ruling class .." (quoted in Stoddart, 1986, p. 18). The question whether such an analysis can be extended to the history of geography is to some extent investigated by Stoddart (1986). He does not elaborate on his alternative model, but as a test for the usefulness of Gramsci's thesis, he examined some aspects of the foundation, organisation and operation of the Royal Geographical Society, as it was central to the institutionalisation of geography in Britain in the 19th Century.

Recently many research projects have been initiated in West Germany to study the role, structure, involvement and effects of Nazi politics in geography departments at universities, in academic and school geography and in geographical praxis (Heske, 1988; Sandner, 1988). The motivating reasons for such research

can be gathered from a summary of a session organised by a working group at the 45th Deutsche Geographentag in Berlin in 1985 on "Geography and Fascism":

> "It became clear that not only questions from within geography (deficits, continuity, etc.) were relevant, but also actual developments in society ... The central point of our discussion is the call for a combination of detail studies with problems of social theory. This would allow conclusions to be made about the history of geography in National Socialism and about the actual relations to scientific development" (Rössler, 1985).

According to Sandner (1988) the interest in research of this nature is by no means accidental. Rather it reflects a process of reorientation which combines several aims: (1) to study recent history of geography on the basis of careful research of records, archived information and other sources including the institutional framework, (2) to integrate social, scientific and political biographies of individuals, the performance of institutes and institutions, and the methodological development with its paradigmatic changes, (3) to relate the recent history of geography to that of other sciences, (4) to combine the notion of change and function by seeking to detect and to understand the interrelation between trends towards continuity, needs for innovation and political instrumentalisation, (5) to explore the links between past and present, since the past has never passed completely and the present has its roots. This includes the need to overcome rigid periodisation.

The relationship between geography and empire was recently the

theme of an international conference[2]. The conference papers were marked by a concern to relate geographical thought to its larger social context, a greater willingness to criticise the discipline and its figures rather than to establish a pantheon of heroes. Central to the conference theme was the relationship between the evolution of geography as a discipline and the different experiences of empire. The following three papers provide an idea of the nature of the discussions: Hudson (1991b) argues that the history of the geographical study of the West Indies was closely related to European, particularly British, imperialist needs in the region. In his paper, "Climate's Moral Economy", Livingstone (1991) claims that geographical discussions of climatic matters throughout the nineteenth, and well into the twentieth century were profoundly implicated in the imperial drama and were frequently cast in the diagnostic language of ethnic judgement. Cormack's (1991) paper deals with geography and the state in Elizabethan England. She endeavours to understand the relationship between the physical and economic maps which geographers drew and the image of the English Empire which Elizabeth demanded. She concluded that early modern geography helped create an English selfconsciousness, a belief in their isolation, autonomy and omnicompetence.

In view of the above it is probably true that, "The history of geography does not simply happen with the passing of time but [that] it is an active creation, the result of struggle" (Smith,

[2]"Geography and Empire: Critical Studies in the History of Geography. An International Conference, Queens University, Kingston, Ontario, Canada. 18 - 20 April, 1991.

1988, p. 3). The history of geography ought, therefore, to be written "... in the spirit of moving our historical understanding of geography beyond the personal and anecdotal..." (Smith, 1988, p. 11).

2.6 **SUMMARY**

The history of geography is much more than the mere listing of the names and publications of great geographers, identifying different research traditions, or searching for paradigms. The history of geography ought to be seen within the context of the society of which it is an integral part. Geography is a social product and as such it demands that the researcher take cognisance of the social processes operating within society. Moreover the history of geography in any particular country can not be divorced from intellectual streams on an international level. This is particularly true for those countries with a colonialist past. The next chapter is, therefore, an attempt to sketch the history of geography in Western Europe in broad outline in order to facilitate an understanding of the institutionalisation of geography in South Africa.

3. GEOGRAPHY AS AN INSTITUTIONALISED DISCIPLINE: AN INTERNATIONAL PERSPECTIVE

3.1 INTRODUCTION

The general development and institutionalisation of geography in South Africa, has been greatly influenced by the nature and status of the discipline in Western Europe. The introduction of geography in South Africa did not occur in a vacuum. It was part of the British imperialist program to introduce the teaching of geography in the colonies and this necessitates an analysis and review of the history of geography in Western Europe and the history of geography in Britain in particular. The main purpose of this chapter is, therefore, to establish the roots of South African geography and, also, to provide the international intellectual context within which the institutionalisation of the discipline in South Africa can be evaluated. The chapter addresses two major periods in the development of geography, (1) the period within which geography existed as an unorganised body of knowledge, and (2) the period which covers its institutionalisation as an academic discipline. Fundamentally linked to the latter period was the emergence of national schools of geography, and in particular the notion that geography is the study of man-environment relationships. In time the investigation reaches back to the early years of the twentieth century, as this

co-incides with the establishment of geography as an academic discipline in South Africa.

3.2 THE PRACTICE AND THEORY OF GEOGRAPHY UNTIL THE SIXTH DECADE OF THE NINETEENTH CENTURY

3.2.1 Purposes of Providence

Major contributions to geographical knowledge were made by ancient Greek and, to some extent, Roman scholars who produced important topographical descriptions of places of the then known world. Such descriptions usually included discussions about the natural conditions, the culture and way of life of the people who lived in these places, types of government and customs. In addition, many of the scholars of this time are also highly regarded for their contributions to the mathematical, astronomical and cartographical traditions in geography. In locating the significance of these contributions, as far as the history of geography is concerned, in retrospect it might be argued that, "Reeds in de Grieks-Romeinse Oudheid kende de geografiebeoefening verschilende denktradities zoals de mathematisch-cartografische, de chorologische en de ecologische" (Dietvorst et al, 1984, p. 124).

However, much of what has been written during these years was coloured by a teleological world view. According to Glacken:

> "In ancient and modern times alike, theology and geography have often been closely related studies because they meet at crucial points of human curiosity. If we seek after the nature of God, we must consider the nature of man and the earth, and if we look at the earth, questions of divine purpose in its creation and of the role of mankind on it inevitably arise. The conception of a designed world, in both classical and in Christian thought, has transcended personal piety. [It has] ... a dominant place in moulding the conception of the earth as a suitable environment for the support of life" (Glacken, 1967, p. 35).

During the middle ages, when all scientific endeavour came to a standstill and the intellectual environment was dominated by the church, a very special relationship continued to exist between geography and theology. During this period most "geographers" were theologists who, together with other scholars, regarded geographical knowledge as important in so far as it contributed to the exegesis of the Bible.

3.2.2 **Early attempts at establishing geography as science**

During the seventeenth and eighteenth centuries, progress in geographical writing was still largely restricted by the influence of the teleological world view, since geographical facts were merely used to prove divine Providence. However, during the same period the conception of "geography" as a science was greatly enhanced by the work of two great scholars, namely Bernard Varenius (1622 -1650), and Immanuel Kant (1724 - 1804), both of whom distanced themselves from teleology. Varenius's major contribution towards the establishment of a basis for modern geographical practice was the publication of

his Geographia Generalis. It was published in 1650, and could be regarded as representing a first "attempt to develop a general geography that would permit the subject to be considered a science, and would facilitate the later development of regional or special studies" (Capel, 1981, p. 39). Geographia Generalis includes descriptions of the shape and size of the earth and the physical geography of continents, seas and the atmosphere; the relations between the earth and the heavenly bodies, especially the sun and its influence on world climate; the location of different places in relation to each other, and the principles of navigation.

Varenius also divided the phenomena to be studied by "geographers" into the celestial or astronomical, the terrestrial or physical and the human phenomena. This constituted the later mathematical, physical and political geography. Mathematical and physical geography was later combined to form scientific geography and thus originated the "new" dualism between physical and social (human) geography.

Towards the end of the eighteenth and during the early 19th centuries much geographical writing could, according to Dietvorst et al, (1984), be classified as either "universal geographies" or "political ('staaten-') geographies" (regional descriptions based on political-administrative units). Until this time geography had, however, no philosophical basis. A first attempt in this direction came from Immanuel Kant, although he regarded geography as merely an approach to the

empirical knowledge which was necessary for his philosophical research. Kant pointed out that there are two different ways of grouping or classifying empirical phenomena for the purpose of studying them: in accordance with the nature of phenomena or logical classification and in accordance with position in time and place or physical classification. The former lays the foundation for systematic sciences, for example geology, which is the study of rocks. The latter provides the scientific basis for history and geography. Within this scheme history is regarded as a chronological science, i.e. a science which studies phenomena one after the other in time while geography is regarded as a chorological science i.e. a science which studies phenomena belonging to the same place. According to Kant:

> "History differs from geography only in the consideration of time and space. The former is a report of phenomena that follow one after the other ("nacheinander") in time. The latter is a report of phenomena that follow one another ("nebeneinander") in space. History is a narrative, geography is a description. Geography and history fill up the entire circumference of our perceptions: geography that of space, history that of time" (in Hartshorne, 1939).

Although Kant provided geography with a philosophical basis, it had no direct influence on the scope of geography of the time. Of much more importance was the work of Alexander von Humboldt (1769 - 1859) and Carl Ritter (1779 - 1859), who endeavoured to provide an alternative to the casual and unsystematic treatment of geographical data by their predecessors.

Until the first half of the nineteenth century, geographical

writing was dealt with in a very descriptive and encyclopaedic way and was still largely influenced by a teleological view of nature. It is against such a general historical background that the new scientific geography of Humboldt and Ritter emerged. Both scholars rejected the conception of geography as mere description while Humboldt also had serious problems with the teleological view of many "geographers". Their contributions to geography were of such a nature that they are today widely regarded as having laid the foundation for geography as a branch of scientific knowledge.

Humboldt was one of the last universal scholars or cosmographers to have lived before the time of scientific specialisation. He was primarily interested in the natural sciences, in particular botany, geology and climatology, and, "His view of nature [was] more specific and detailed than earlier ones mainly because he had travelled so widely and had made many observations personally; it is free of teleological explanations and takes into account both modifications of nature by man and environmental influences on him" (Glacken, 1967, p. 543).

Humboldt's work was characterised by a holistic approach: the need to understand the whole complex system of the universe as well as his conception of the harmonious unity of nature. Humboldt divided the natural sciences into Physiography, i.e. the description of nature; Historia telluria, i.e. the geological history of the earth; and Geonoria or Physical Geographia (Holt-Jensen, 1988). Humboldt greatly contributed to

the development of systematic physical geography, particularly biogeography and climatology. His work was highly regarded by all who were interested in the earth sciences and via the geographical societies his work was introduced to many contemporary "geographers" and scientists in other disciplines such as Murchison and Somerville (Capel, 1981).

Carl Ritter started his academic career as professor in history in Frankfurt. After a short period in this position, Ritter was called to Berlin where he was appointed as the first professor of geography in 1820. He occupied this position until his death in 1859. His appointment to the post was largely due to the initiative of leading politicians (Holt-Jensen, 1988). Ritter was primarily a human and regional geographer. With his inductive method of work, based on empirical observation, he, like Humboldt, rejected descriptive geography as practised by his predecessors. His main concern was the interrelationships of facts and phenomena in order to understand the complex whole (Ganzheit): "Hij stelde so de geografie tegenover de systematische wetenschappen waarin afzonderlyke groepen van verschijnselen werden ondersocht. Doel van het geographisch onderzoek was nu juist de vastelling van de ruimtelijke verschijndenheid en samehang van die verschijnselen" (Dietvorst et al, 1984, p. 129).

The appointment of Ritter, an historian, to the post of professor of geography must be seen against the background of what was customary during his time: "In the European centres of

higher education, the relationship between geography and history was close until well into the nineteenth century ... on many occasions geography was considered a simple auxiliary of history, as demonstrated by the existence of professors of geography and chronology in some universities as late as the middle of the century" (Capel, 1981, p. 39). It was Ritter's training in history as well as his religious beliefs that largely contributed to his particular conception of Geography. Ritter believed that thorough research into the historical development of culture and its relation to physical regions would demonstrate the physical layout of the land as God's educational home for humankind.

The death of Humboldt and Ritter in 1859 marked the end of what many regard as the classical period in the development of geography. They brought to a close an era in which geography was generally regarded as merely the description of regions and countries. Both Humboldt and Ritter were, during their lifetime, held in high esteem not only in the scientific world but also in society at large. Their contributions to science, and their endeavours to establish a scientific basis for geography in particular, are widely appreciated by present day scholars. This makes it so much more difficult to comprehend why geography came to such an abrupt standstill after their deaths, so much so that the personal chair to which Ritter was appointed ceased to exist after his death. The irony of this situation is that Humboldt and Ritter may, in a certain sense, be "blamed" for the decline in geography after their death. In the first place, the

cosmographic approach, of especially Humboldt, did little to enhance geography's image as a specialised discipline. Secondly, Ritter's teleological conceptions, which were seen to be unscientific, fell into disrepute when a new philosophy of science saw the light with the publication of Darwin's The Origin of Species in 1859.

The decline of geographical science during the first half of the nineteenth century did not only occur in Germany but all over Europe: "frequently [it] appears as a science on the point of disappearance, lacking academic interest - except for historians - forgotten or impugned by many scientists and appreciated solely by the general public because of the descriptions of exotic countries that it contained" (Capel, 1981, p. 46). In addition to the above, the emergence of specialised sciences during the first half of the 19th century is regarded as having played a major role in the decline of geography. What Humboldt called "The Physics of the Globe" or the "Theory of the Earth" branched off into several autonomous sciences like geology, meteorology and climatology. The publication of Darwin's work also meant more prominence for sciences like biology and geology with the resultant threat to the universalistic claims of geography, and the questioning of Humboldt and Ritter's unitary conception of nature: "Earlier universalistic philosophies were gradually replaced by a scientific philosophy which emphasised natural laws and causality and found it difficult to accommodate a universalistic geography as a scientific discipline (Holt-Jensen, 1988).

Many of Ritter's students were influenced by his teleological ideas, and "vervielen soms tot teleologische dromerij en onverantwoorde speculatie omtrent de beinvloeding van die geschiedenis door het geografische milieu" (Dietvorst et al, 1984, p.130). This, according to Dietvorst et al (1984), led to the degeneration of geography into what was previously known as topographical description. Geography's image was further tarnished by Ritter's emphasis on historical analysis, to the extent that geography came to be regarded as merely a subdivision of history or as a subsidiary subject to it.

Thus, during the nineteenth century, and especially since the death of Humboldt and Ritter, geography experienced a major crisis. Its relationship to other emerging sciences, its subject matter and its approach to it, as well as its conceptual basis, did little to enhance its status as an academic discipline. This was very unfortunate especially at a time when so many other specialised scientific branches began a process of institutionalisation and professionalisation.

3.2.3 **The teaching of geography**

While the nature and scope of geography were receiving attention at the academic or university level, school geography during this period remained isolated and "the most specifically geographical texts produced ... were either geographies or cosmographies that followed the Ptolemac conception and

constituted, in essence a localisation of toponyms for the use of navigators and astronomers, or descriptive geographies that contained narrations on the characteristics of the lands, customs and social organisation of different countries, and that responded to the interest and curiosity of a wide public" (Capel, 1981, p. 39).

In Germany a very close relationship between history and geography existed until the beginning of this century when the Prussian government via the department of Science, Art and National Education ("Wissenschaft, Kunst und Volksbildung"), proposed that the teaching of geography should incorporate the teaching of geology in order to distinguish geography more clearly from the teaching of history (Heske, 1988).

The combination of history and geography existed in many other European countries. For the greater part of the nineteenth century geography was largely regarded, not only as a subject of little value, but it was also seen as simply an adjunct to history: "a time in which geography was considered almost a dependency of history, and did not have value other than as illustration of the historical facts. Thus, as chronology demonstrates the distribution of facts in time, Geography, which we will call more specifically historical, demonstrates their distribution in space. Yesterday's geography, according to Bertacchi, was, before all, an historical geography, that extended to the present, has converted itself into political and statistical geography" (in Capel, 1981, p.44).

In French schools geography was regarded as merely one of the "two eyes of history" beside chronology. This conception of geography also existed as far as higher education is concerned. Geography was taught in combination with history and was regarded as important only insofar as it could help to understand historical events. The only university professorship which accommodated geography, existed under the title "Geography and History" at the Sorbonne from 1809 until 1812. The post was occupied by historians, "who confined themselves 'with a pedantic solemnity to the geography of Homer and Herodotus" (Capel, 1981, p. 42).

Also in the Netherlands, until the 1860s, geography did not exist as an autonomous and compulsory subject, as it was taught by classicists and historians in conjunction with their own disciplines (Dietvorst et al, 1984).

In Great Britain, the nature of the geography that was taught differed substantially from that which was taught on the continent. Geography was far more oriented towards the physical aspects and therefore it was taught rather in combination with geology. In Great Britain much of the early impetus given to the teaching of the subject can be traced to the Royal Geographical Society which offered medals for annual competitions in secondary schools (Webster, 1939). Although geography had been taught at the University of Oxford from the sixteenth to the eighteenth centuries it experienced a rapid decline due to the changes in the educational system, so that,

"... in the first half of the 19th century courses in mathematical geography were given at only one college for a small audience" and among historians "geography hardly received better treatment" (Capel, 1981, p. 42). In 1833, a professorship in geography was created to which Captain Maconochia, then secretary of the Royal Geographical Society, was appointed. However, the post remained vacant when he left after a short period because geography "does not seem to be considered a part of general education" (Crone, in Capel, 1981, p. 43). Due to the rapid development of the natural sciences during the first half of the nineteenth century, geography, particularly physical geography, came to be considered part of these disciplines According to Capel it is also important to note "the change in section 'C' of British Association, which was originally entitled 'Geography and Geology', but was changed to 'Geology and Physical Geography' in 1839. Later, however, in 1851, the section 'Geography and Ethnology' was created and survived until 1878 (Capel, 1981; See also Freeman, 1961). It is also significant to note geography's combination with ethnology rather than with history. Although it was customary to include man in the works of physical geography, until the end of the nineteenth century "there was no clear conception of what 'geography of man' should embrace apart from the 'distributions'" (Dickenson, 1969, p. 12). The close relationship between physical geography and geology is revealed in the work of R I Murchinson (1792-1871) and Mary Somerville (1780-1872), both of whom were greatly influenced by Humboldt's work in Germany. Murchinson, a geologist and one of the founders

of the Royal Geographical Society, considered physical geography and geology as two "inseparable scientific twins" (Capel, 1981, p. 43).

Despite the general decline of geography during the first three quarters of the nineteenth century, geographical knowledge was still regarded as necessary, especially at school level even if it was merely taught in combination with other disciplines. During the 1870s, due to changing political circumstances, geography caught the attention of politicians who were very much interested in its utilitarian value. This led to its institutionalisation as an academic discipline at several universities right across Western Europe during the last quarter of the nineteenth century. The rest of this chapter is devoted to the history of geography as an organised body of knowledge. It deals with the process of institutionalisation as well as the emergence of schools of geographic thought and more specifically the development of Geography in Britain.

3.3. THE INSTITUTIONALISATION OF GEOGRAPHY

3.3.1 Geography and empire: A niche for geography as an academic discipline

Geography as we know it today is of very recent origin. Until the last quarter of the nineteenth century geographers operated without any institutional setting. As a field of advanced study taught by professionally qualified individuals, it first

appeared in Germany in the 1870s.

It has been briefly indicated in the previous section that geography, as a field of scientific endeavour, was doomed to disappear. However, it suddenly re-surfaced during the early years of the 1870s and was soon a recognised academic discipline right across Europe. Was this because people all of a sudden started to realise geography's intrinsic value as an academic discipline which could contribute to science or knowledge? Recent research reveals that this was clearly not the case. It is argued that the increase in the popularity of geography, as an academic discipline, could be ascribed to a growing recognition of its utilitarian value by the middle and upper classes during the 19th century (Capel, 1981; Huckle, 1985). Because these classes regarded geography to be of fundamental importance as a school subject the need arose to train suitable geography teachers to teach geography which would suit "the vocational needs of future merchants, clerks, statesmen and strategists; school geography ... served to facilitate increased exploitation of the physical environment and legitimate nationalism and imperialism. The resulting demand for teachers explains the survival of academic human geography which was earlier in a state of crisis, and its establishment in the universities by the turn of the century" (Huckle, 1985, p. 296).

Geography, therefore, increasingly developed into a science serving the needs of the European ruling classes. It has also been argued that imperialism, in particular, played a very

prominent role in the establishment of geography as an academic discipline. In his seminal paper, Hudson (1985) demonstrates that the study and teaching of geography has been strongly related to the interests of imperialism in its various aspects including territorial acquisition, economic exploitation, militarism and the practice of class and race domination. In contrast to traditional histories of geographic thought, Hudson emphasises that the origins and development of modern geography are integral to the changing structure of society in general and the experience of empire in particular.

Harvey (1984) makes it also very clear that the history of our discipline cannot be understood independently of the history of the society in which the practices of geography are embedded. He connects the establishment of geography as an autonomous academic discipline to the rise of merchant, and later industrial and finance forms of capitalism in the West: "Because of the spatial integration of the world economy under Western politico-economic hegemony the West demanded and depended upon the crystallisation of new forms of geographical knowledge within an increasingly fragmented professional and academic division of labour" (Harvey, 1984, p. 1).

The interconnectedness of geography and society is forcefully illustrated in Peet's (1985) article on the social origins of environmental determinism, in which he also focuses on the question of geography as legitimation ideology: "Environmental determinism was geography's entry into modern science.

Determinism attempted to explain the imperial events of late nineteenth and early twentieth century capitalism in a scientific way. Yet, to gain a prominent position in the mass reproduction of ideas, geography had also to legitimate intersocietal competition and the conquest of some societies by others" (Peet, 1985, p. 310). Peet (1985) simplifies "society" into two types of context for the development of modern geography, namely the particular sociopolitical processes urgently demanding scientific rationalisation and the more general scientific ideas both responding to this social process and immediately impinging on geography. As far as the socio-political context is concerned, an academic discipline, according to Peet, achieves fame if it responds effectively to societies' needs and fortune, if it responds to the expression of need by the existing holders of power and influence:

> "In late nineteenth century capitalism, this meant capitalist society's need for geographic expansion expressed by the ruling class, the industrial bourgeoisie, and those other class elements of state power who supported a vigorous economy and a powerful nation - landed interests and a feudal aristocratic remnants on the one hand and a satisfied middle class on the other. The achievement of modernity in geography meant serving these class groups' expression of the social need for explanation in the imperial era" (Peet, 1985, p. 320).

Geography was also reacting to the general intellectual context and emerged as part of a new, "scientific" understanding of the world in the sense that capitalism was then expressed by positivistic science. Peet is also of the opinion that the definition of geography as the science of human-environment

relations belongs to the late nineteenth and early twentieth centuries and that it is an approach which "did not result exclusively or even primarily from the internal dynamic of geography's development but from the discoveries of evolutionary biology and from the urgent need for a theory legitimating capitalist social relations, intersocietal strife and geopolitical expansion in an age of imperialism" (Peet, 1985, p. 326).

In line with the previous authors, Capel (1981) identified several factors which lead to the institutionalised existence of the community of geographers. Of primary importance was the presence of geography in primary and secondary education at the time when the European countries begin the rapid process of diffusion of elementary education. The necessity to train geography teachers for primary and middle schools was the essential factor which led to the institutionalisation of geography in the university and the appearance of the scientific community of geographers. Despite enjoying the support of tradition, governments, geographical societies and some scientists, geography had clear rivals that aspired to its function (e.g. physiography or ecology and in the social sciences economics or later sociology). The reasons why geography continued to figure in educational programmes is ascribed by Capel (1981) to other secondary factors: (1) geography's role in shaping a feeling of nationalism. Geography fulfilled a role which, like that of history, was absolutely essential in the epoch of the appearance of European

nationalism. It fulfilled it mainly through teaching; by transmitting to the populace ideas of the 'unity within diversity' of the national territory. It therefore increasingly developed into a science at the service of governmental interests and of nationalist European bourgeoisie; (2) geography was also important for spreading knowledge of the colonial empires. The detailed study of the colonies was an indispensable and fairly extensive part of the causes dedicated to "universal descriptive geography" (Capel, 1981) and was therefore highly regarded by governments of the time; and (3) geographical societies were pressurising governments for the recognition of the academic status of geography. The need to establish geography as an academic discipline, was actively supported and promoted by the various geographical societies (e.g. The Royal Geographical Society), which "re-enforces the idea of the close relationship between the institutionalisation of geographical science and the interests of the dominant classes, in that the development of the geographical societies is very much linked to the process of European imperial expansion" (Capel, 1981, p. 54). In 1842, W R Hamilton, then president of the Royal Geographical Society, conceptualise the scope of geography in militaristic, commercial and imperialistic terms. Geography according to Hamilton was

> "... the mainspring of all the operations of war, and of all the negotiations of a state of peace; and in proportion as any one nation is the foremost to extend her acquaintance with the physical conformation of the earth, and the water which surrounds it, will ever be the opportunities she will possess, and the responsibilities she will incur, for extending her commerce, for enlarging her powers of civilising the

yet benighted portions of the globe, and for bearing her part in forwarding and directing the destinies of mankind" (in Livingstone, 1991, p. 5).

3.3.2 Geography as an organised body of knowledge

The first chairs in geography: There were no trained geographers when geography became an institutionalised subject, with the result that the people appointed to professorships in geography came from diverse but to some extent, related disciplines such as history, geology, ethnography, zoology, botany and natural science. The new professors in geography were, therefore, set the incredible task of not only defining the nature and scope of the new discipline but also defending its existence in relation to other related disciplines. Due to the decline of the discipline before its institutionalisation there was very little to fall back on, with the result that their theoretical and philosophical perspectives were, to a large extent, based on the scientific and philosophical ideas current at the time, which include positivism, as a scientific method, and Darwinian evolutionism (Capel, 1981). It is within this context that the origin and early development of geography as an academic discipline should be understood.

It has been shown that geography owes its existence as an academic discipline to a combination of various factors. However, underlying all these are, according to Capel (1981), the close relationship between the growth of basic schooling,

the corresponding demand for geography teachers and the creation of university chairs. The history of geography as an academic discipline goes back the furthest in the German speaking world (i.e. Germany and Switzerland). This may be explained by the fact that it was in these countries that elementary education was first declared obligatory. This, in combination with the impact of the Franco-Prussian War of 1870/1 and the perception by influential politicians that geography could also serve an important political purpose as a contemporary discipline could have prompted the institutionalisation of geography as an academic discipline: "Geographical education could be used to reinforce and popularise the idea of the nation-state, a commendable objective of that time, and also to provide people with a better understanding of the economic and political possibilities of world trade and development" (Holt-Jensen, 1988, p. 21).

In order to achieve these goals, it was necessary to provide a better education for geography teachers, hence the Prussian government's decision to establish chairs of geography in all the Prussian universities. Germany was well ahead as far as the establishment of geography departments was concerned. In the period between 1870 and the end of the nineteenth century, thirteen geography departments were established in Germany, two in France, four in Great Britain, three in the USA and only one in the Netherlands.

After losing the Prussian-France War, France decided on a

dramatic program of school reform since it was realised that the war had been lost partly because Germany's science and culture were much more powerful. The new curriculum which replaced the old classical one included geography. In response to this the first chair of geography was established in Paris in 1877.

The perceived importance of geography in the educational system also led to the establishment of chairs in geography in The Netherlands: "Met de ontwikkeling van industrie, stoomscheepvaart, spoorweg en derglijke was die mondiale arbeidsdeling vergroot, die verplaatsing van personen en goederen verveelvoudigd en die behoefte aan orientatie en kennis van een steeds groter wordende omgewing zeer sterk toegenommen. Kennis is macht en kennis wordt verworven in het onderwijs: aardrijkskunde kwam steeds meer in die belangstelling" (Dietvorst et al, 1984, p. 163). The process of institutionalisation in the Netherlands seems to be somewhat more problematic. Despite considerable pressure from the Aardrijkskundig Genootschap for the establishment of a chair at a Rijks university the 1876 Law on Higher Education still did not include geography. This was mainly due to a lack of funds for disciplines other than natural sciences, as large amounts of money was spent on the promotion and development of the natural sciences. It was only in 1908 that two chairs in geography, one in physical and one in statistical-political geography, economic geography and general geography, were established. Before this time there was a chair in geography at the Gemeentelijke University of Amsterdam which had been established

in 1877. This had been possible because the Gemeentelijke University was more autonomous and also more progressive than the Rijks Universities.

The first British geography department was established more than a quarter of a century after the institutionalisation of geography in Germany. However, geography was taught in Great Britain long before this time. In 1833, three years after the founding of the Royal Geographical Society, Captain James Machonochie was appointed to a personal chair of geography at University College, London. He occupied this post until 1836. Fifty years later, in 1887, Halford J Mackinder was appointed to a permanent readership at Oxford university which was financially supported by the Royal Geographical Society. The Royal Geographical Society also supported the first geography departments established at Oxford in 1900 and at Cambridge in 1908. The Royal Geographical Society, therefore, played a very important role in the establishment of geography as an academic discipline in Great Britain, which means that "British geography emerged as a scientific discipline without the aid from strictly scientific men" (Stoddart, 1986, p. 67). Geography did not have a very smooth passage into British universities. Holt-Jensen explains as follows:

> "The reluctant and somewhat hostile attitudes in the universities towards the establishment of geography as an academic discipline were largely due to the rapid growth of the systematic sciences and the increasing need to specialise in scientific work. The image of geography as an all-embracing cosmographic subject did not fit the academic development of the period. Influential academics argued that the fields of geographical inquiry were already covered by existing disciplines, such as history and geology"

(Holt-Jensen, 1988, p. 22).

The institutionalisation of geography in Great Britain must, however, also be seen against the background of the Keltie Report on the teaching of geography. Dr Scott Keltie was asked in 1884 to investigate the teaching of geography in schools, training colleges and universities in great Britain. In a report, submitted in 1886, he presented the following findings: (1) that geography in universities was non-existent, (2) in public schools geography was almost non-existent as the Royal Geographical Society's examinations for their medals have proved. And when it was attempted, it was taught by the most incompetent master, (3) it was required for the public services, and (4) the only places where geography was systematically taught in England were in the Training Colleges and in Board Schools. The neglect of school geography was ascribed to various factors: (1) geography was one of the subjects outside the scope of the traditional classical curriculum and was therefore not a subject for which university scholarships were granted, (2) the negative and apathetic attitude of headmasters also played a role because in many cases, they fail to realise the educational value of the subject and, in general, had a horror of increasing the scope of their curriculum, (3) there was no clarity as far as the scope of geography was concerned as the subject matter was a mere mass of unrelated facts to be learned by heart - 'Cape-and-Bay' geography.

The British government was not interested in establishing

geography departments. At the instance of the Royal Geographical Society and because of their financial support, the readership in geography was instituted at Oxford in 1887. Mackinder, who was appointed to the readership, was an ardent campaigner for the extension of the teaching of geography in Great Britain. He realised that, in order for geography to flourish at school level, more university trained geography teachers were required. It was, therefore, as a result of his efforts and with the support of the Royal Geographical Society that the school of geography was established at Oxford University in 1899.

The founding of geographical societies and journals: By 1865 there were eleven geographical societies, among them the Societe' de Ge'ographie de Paris (1821), the Gesellschaft fur Erdkunde zu Berlin (1828) and the Royal Geographical Society (1830). The number of societies grew steadily so that by 1880 there were about one hundred with a membership of about 50000 consisting largely of officers, politicians, businessmen, etc. Geographers were clearly a small minority. Apart from promoting geography as an academic discipline the societies were also seriously involved in organising geographical expeditions not only for scientific but also for political and economic reasons. A main function of these societies was also to distribute knowledge and information about foreign countries. They did this by organising public lectures and by the publication of journals. The societies were generally very popular among the public. However, the geographical societies were later criticised for not being scientific. This prompted the

The geographical societies were later criticised for not being scientific. This prompted the establishment of new societies alongside those which already existed. In the USA, for example, the Association of American Geographers (1904) was established alongside the American Geographical Society (1852). In the Netherlands, the Nederlandse Vereniging voor Economische (en Sociale) Geografie was founded alongside the KNAG (1873) in 1910 and the Association of British Geographers was founded to exist alongside the Royal Geographical Society (1830).

Also of major importance in promoting geography as a science and as an autonomous discipline was the publishing of various scientific journals, in many cases the responsibility of geographical societies. Some of the more influential journals which existed by the second decade of this century (with dates of establishment in brackets), are given in Table 1.

Geography in the world: James and Martin (1981) regarded Germany, France and Great Britain as the major European centres from which geography as an academic discipline was introduced to many other countries all over the world (Table 2). German geography greatly influenced the development of the discipline in other German-speaking countries and Northern Europe. French geography was influential in Southern Europe and in Latin America, while the British were mainly influencing the development of the discipline in Britain's former colonies in Africa and Asia.

TABLE 1: SOME INTERNATIONAL JOURNALS (After Dietvorst et al, 1984, p. 89)

Germany	-	Zeitschrift der Gesellschaft für Erdkunde zu Berlin (1853, since 1949 entitled Die Erde)
	-	Petermanns Geographische Mitteilungen (1855)
	-	Geographieshe Zeitschrift (1895)
Great Britain		
	-	Scottish Geographical Magazine (1885)
	-	Geographical Journal (1893)
	-	Geography (1901)
USA	-	Journal of Geography (1902)
	-	Annals of the Association of American Geographers (1911)
	-	Geographical Review (1916)
	-	Economic Geography (1925)
France	-	Annales de Ge'ographie (1891)
The Netherlands		
	-	Geografisch Tijdschrift (earlier: Tydschrift van het Kon.Ned.Aardr. Genootschap, 1876)
	-	Tydschrift voor Economische en Sociale Geografie (1920)
Sweden	-	Geografiska Annaler (1919)

3.3.3 Geography's link with the natural sciences : The development of physical geography

Because of the nature of geographical writing until the mid-nineteenth century, its decline since the death of Humboldt and Ritter and the "non-academic" rationale for its institutionalisation, geographers were confronted with the mammoth task of promoting geography as an academic discipline

TABLE 2: COUNTRIES INFLUENCED BY GERMAN, FRENCH AND BRITISH GEOGRAPHY (Based on James and Martin, 1981)

Germany:	Sweden	The Netherlands	
	Norway	Switzerland	
	Finland	Austria	
	Denmark		
France:	Belgium	Brazil	Mexico
	Italy	Argentine	French Canada
	Spain	Chile	
	Portugal	Colombia	
Britain:	Australia		
	New Zealand		
	English-speaking Countries		
	India		
	Pakistan		
	Egypt		
	British Colonies in Africa		
	West Indies		

in its own right. It was, however, according to Holt-Jensen (1988), a group of natural scientists with interests in physical geography who won academic respect for the subject during the latter half of the 19th century especially in Britain and in Germany.

Geologists came to play such an important and prominent role in the development of geography that the process could be referred to as the "geolification" of geography during the 1870s and 1880s. Lyell's Principle of Geology (1830) had a major impact in this regard. He defined geology as a "science which investigates the successive changes that have taken place in the organic kingdoms of nature; its enquiries into the causes of these changes and the influence which they have exerted in

modifying the surface and internal structure of our planet" (in Capel, 1981, p. 46).

Because geologists were too involved with the internal structure of the earth, geological time-scales and the analysis of fossils, the morphology of the earth's surface became a neglected field of study: "Here was a field where geography could carve out a place for itself as a scientific discipline. The study of landforms became the leading field of research for most of the professors appointed to geography chairs in the latter half of the 19th century" (Holt-Jensen, 1988, p. 29). The first person to publish a major work in geography with the dominant focus on non-human aspects was Mary Somerville (1780-1872). In her publication, "Physical Geography" (1848) she described in detail the topography of each continent and of the distributions of plants and animals. She also included human beings in her descriptions so that her work could also be regarded as cosmographic in nature. More than twenty years later Oscar Peschel (1826-1875) published his "New Problems of Comparative Geography as a search for a Morphology of the Earth's Surface" (1870). In the light of the growing popularity of geology Peschel found it necessary to define a new focus for geography. He regarded the study of the morphology of the earth's surface as the basis for geographical science. Two other German geographers who contributed extensively to the development of physical geography were Ferdinand von Richthoven (1833-1905) and Albrecht Penk (1858-1945). Both were trained geologists. Von Richthoven occupied the chair of geography in

Bonn. Although he did not exclude humanity from his teaching of geography, his research focus was clearly on the study of landforms. Penck was first appointed to a chair in Vienna where he established an influential school of geography. In 1906 he moved to Berlin where he was also held in high esteem as a geographer. Penck's major contributions were in the field of glacial morphology.

In Britain the teaching of physical geography was largely influenced by T H Huxley's Physiography (1877) which was much wider in meaning than what was regarded as physical geography. Physiography was the description of nature and encompassed the systematic sciences of botany, geology and zoology. Huxley, a paleontologist and the two pioneer geologists, Sir Charles Lyell and Sir Archibald Geikie combined knowledge from these disciplines to form the amalgam called "Physiography": "Physiography was essentially the geographical synthesis at the physical level; sometimes it was extended to cover an outline of biography and anthropogeography, but never very successfully. Yet it attempted a synoptic survey of the realm of nature and its interlocking parts" (Woolridge and East, in Knox, 1958, p. 140). Physiography was regarded as an important part of geography. It did much to enhance the educational value of geography especially at a time of growing interest in the natural sciences and science teaching. Physical geography fitted into Huxley's conception of scientific education:

> "I conceive the proper course (of a scientific education) to be somewhat as follows. To begin with,

> let every child be instructed in those general views of the phenomena of nature for which we have no exact English name. The nearest approximation to a name for what I mean, which we possess, is 'physical geography'. The Germans have a better, 'Erdkunde' ('earth knowledge' or 'geology' in its etymological sense), that is to say, a general knowledge of the earth, a what is on it, in it and about it" (Huxley, in Knox, 1958, p. 141).

As more specialised earth sciences became established towards the end of the nineteenth century, physiography as a comprehensive subject eventually vanished from the syllabi (Holt-Jensen, 1988). This vacuum was filled by a new sub-discipline in 1895, namely geomorphology, largely influenced by the American W M Davis (1850-1934) and his ideas on the cycle of erosion.

By the beginning of the last decade of the nineteenth century, geography was well established as both a school subject and as an academic discipline in the major centres of learning in Western Europe. What remained, then, was for geographers to clearly define their subject matter and to refine their concepts and philosophical underpinnings. This was a very important task because, as a relatively new science, geography had to find its place among other related and well established disciplines. A major advancement in this regard was the emergence of national schools of thought as well as debates regarding the nature and scope of geography. Some of these issues will be dealt with briefly in the following section.

3.4 THE EMERGENCE OF NATIONAL SCHOOLS OF GEOGRAPHY IN GERMANY AND FRANCE

The publication of Friederich Ratzel's Anthropogeographie: Gründzüge der Anwendung der Erdkune auf die Geschichte (1882) and Anthropographie: Die geographische Verbreiting des Menschen (1891) and his Politische Geographie (1897) as well as Vidal de la Blache's Tableau de la geographie de la France (1903) contributed tremendously to the image of geography as a scientific discipline. These publications went a long way to rid geography of an image of being merely a "descriptive science". Ratzel's "Environmental Determinism" and De la Blache's "Possibilism" were first attempts at generalisations by geographers with the physical environment playing a major role in their understanding of human behaviour: "Instead of merely presenting information in an organised manner, either topically or by area, geographers began to seek explanations for the patterns of human occupation of the earth's surface ... a theoretical position was established around the belief that the nature of human activity was controlled by the parameters of the physical world within which it was set" (Johnston, 1987, p. 36).

Other major schools which emerged in Germany at the time were Alfred Hettner's conception of geography as chorology, and Otto Schluter's geography as the study of the cultural landscape. Hettner viewed geography as a unified science, based on its method or approach, rather than the materials of study. He is, however, best known for his länderkundliche Schema. His Schema

provided an organisational structure for geographical research and it influenced German geography for many years, especially as far as the continued focus of attention on the theme of man's relation to his physical and biotic surroundings was concerned (James and Martin, 1981). Hettner's framework for regional study consists of very specific themes usually starting with a description of an area's location. This is then followed by chapters on geology, surface features, climate, vegetation, natural resources, population distribution and settlement patterns, forms of the economy, routes of circulation, political divisions and aspects of material and non-material culture. The sequence indicates cause and effect relationships which

> "diende zich te richten op de aanwezigheid van de zes natuurrijken, en hoewel de volgorde der behandeling op zich genomen willekeurig is, ligt het volgens Hettner voor de hand te beginnen met de anorganische natuur, om vervolgens de planten- en dierenwêreld en daarna de menselijke activiteit te beschrijven. Hij verdedigt de volgorde met het argument dat die natuurrijken zonder welke de andere niet aanwezig kunnen zijn, het eerst moeten worden behandeld. Simpel gesteld: zonder lithosfeer geen plantenwêreld; zonder plantenwêreld geen menselijke activiteit (Dietvorst et al, 1984, p. 152).

A major challenge to Hettner's conception of geography came from Otto Schlüter (1872-1952). Schlüter's discontent with geography as chorology was shared by several other geographers

> "who were uneasy about the identification of geography as a chorological science and hence, one that, like history, was defined by its method rather than its subject matter and concepts. Others were also concerned about the overemphasis on the significance of the physical features of an area that resulted from following the schema. By tying everything back to the

> physical features, other important relationships were overlooked - such as the relation of population density to the economy, or the economy and the routes of circulation, or even the relation of all these to political units" (James and Martin, 1981, p. 176).

Schlüter's conception of geography differed from that of Hettner in several important ways. Hettner identified three categories of science, namely, the historical (or chronological), the systematic and the chorological. While accepting the first two categories, Schlüter rejected the category of chorological sciences and, therefore, also the definition of geography as chorology. He saw the identity of geography as an academic discipline in the acceptance of the observable landscape as the subject matter of geography. He also suggested, in contrast to Hettner, that the non-material content of an area, like political organisation or economic institution, could be used to explain the observable landscape (James and Martin, 1981).

Since environmental determinism and possibilism were by far the more dominant schools of thought, with the greatest international impact, the rest of this section will be devoted to a more detailed discussion of the main protagonists, as well as the nature of determinist and possibilist thinking.

3.4.1 **Ecological geography in Germany : Ratzel**

Friederich Ratzel (1844 - 1904), may be regarded as the founder of modern human geography. After Ratzel qualified as a

pharmacist he continued his studies in the natural sciences, studying geology, palaeontology and zoology. He graduated from the University of Heidelberg in 1868 with a dissertation in zoology. The following year he went to Jena to study with Haekel. Haekel's application of Darwinian laws to the operation of human society (social Darwinism) greatly influenced Ratzel and it also provided the context for his later research. During the early 1870s Ratzel was closely associated with the ethnographer and explorer Moritz Wagner. Bassin (1987a) regarded this relationship as probably the single most significant influence on Ratzel's intellectual development. It was Wagner's "Law of Migration" which fascinated Ratzel the most and which also provided the basis on which he developed his conception of human geography. Livingstone (1985) sees a direct link between Wagner's migration theory and Lamarckism and argues that it was on the basis of this biological theory that Ratzel accounted for the characteristics of social groups as local responses to the geographical environment.

After the death of Carl Ritter in 1859, German geography developed a very strong emphasis on the physical aspects. In response to this tendency, Ratzel tried to re-introduce Ritter's conception of geography, but in a modified way (Dietvorst et al, 1984). Ratzel's conception of geography was clearly influenced by the then dominant Weltanschauung (world view), which was rooted in Darwinism. Bassin (1987a) described this world view as one of scientific materialism resting on three important assumptions: (1) a belief in the unity of all organic life on

earth; (2) the primacy of imminent natural laws which directed the behaviour and development of the organic world (humans included and by extension also human society). It is within this context that Ratzel's conception of geography differed from that of Ritter. Ritter's teleological ideas were replaced by a search for causal relationships. Modern geography, according to Peet (1985) emerged as part of a new scientific understanding of the world, in contrast to previous religious forms of comprehension.

Ratzel's ideas regarding geography were for the first time outlined in his Anthropogeographie, Vol. 1 (1882). In his view geography was to deal with three aspects (Bassin, 1987a): (1) the description of the regions of the ecumene and the distribution of humankind over it; (2) the study of human migratory movements of all types in their dependency on the land; and (3) the analysis of the effect of the natural on the human body and spirit both on individuals and on entire social groups. It is the last point, according to Bassin (1987a), which clearly indicated the "determinist" tendency in Ratzel's thinking. Contrary to popular belief Bassin is, however, not inclined to describe Ratzel as a determinist: "Ratzel never devised a system of environmental influences, and his use of these ideas remained eclectic and rather abstract ... Ratzel's 'geographical determinism' remained to the end strongly influenced by the ecological emphasis on the totality and mutuality of environmental interactions, and in this sense did not entirely resemble what was later developed under his name" (Bassin, 1987a, p. 127). Dietvorst et al differs somewhat from

Bassin in this regard: "Hoewel Ratzel op verschillende plaatsen in zijn werk de wederzijdse relaties tussen natuur en menscheid benadrukt, blijk de uitwerking van dit principe in de praktijk vrijwel beperkt te worden tot de invloed van de natuur op die mense" (Dietvorst et al, 1984, p. 133).

The second volume of Anthropogeographie (1891) was less deterministic but also less popular. Central to this volume was the concern with the concentration and distribution of population and population settlement forms as well as migrations and the diffusion of cultural characteristics. In it he also stressed the significance of the historical development and cultural background of populations in explaining phenomena in human geography (Holt-Jensen, 1988).

Ratzel will also be remembered as the founder of political geography and especially for his contribution to an organic theory of state and society. He "developed his political geography as an integral part of his anthropogeography, based on the same natural-scientific principles and, indeed, representing its crowning element" (Bassin, 1987a, p. 127). Fundamental to his Politische Geographie (1897), is his state - organism analogy. Ratzel regarded the state not as a static entity but as something that needed space to expand physically as its population grew: "Like other organisms it was constantly growing, as demonstrated by increase in population and expansion of the territorial base, and with this growth went an increased need for territory from which to derive its sustenance" (Bassin,

1987a, p. 127). This territory Ratzel termed the Lebensraum (living space). Ratzel's political geography ought to be seen against the background of late nineteenth century European imperialism and more specifically as a particular response to the tensions between nation state and empire. The last quarter of the nineteenth century witnessed a major drive by European powers for colonial acquisitions in Africa and Asia. This was, however, not to be reconciled with the nation-state idea promoted in Europe since the French revolution. The nation-state ideal was, according to Bassin, fundamentally challenged by the realities of the new imperialism: "the openended political and territorial expansion of the developed world across the globe and the absorption of foreign lands and peoples into the national-imperial state framework of the respective metropole. This was from the outset irreconcilable. Both logically as well as practically, with the territorially limited and socially homogeneous unit implied by the nation-state" (Bassin, 1987b, p. 473).

To deal with this contradiction an alternative political Weltanschauung had to be offered. Ratzel's political geography provided such an alternative: "It represents the attempt to develop a theory of expansionism in which the need for more or less constant physical growth of the state was explained, as it were, 'scientifically' in the manner popular for the age: by direct analogy with the plant and animal world" (Bassin, 1987b, p. 476). Ratzel's political geography laid the foundation on which Geopolitik developed. It was founded, to a large extent,

on his organismic view of the state and the notion of Lebensraum.

During the nineteenth century, race and heredity were hotly debated issues. An understanding of the evolution of races and the differences between them were complicated by the dilemma of "nature or nurture", i.e. the relative significance of factors of inborn, inherited genetic makeup as opposed to external or environmental influence (Bassin, 1987c). Towards the end of the nineteenth century racial thinking clearly favoured the former:

> "The qualities attributed to different races, it was argued, derived wholly from their differing genetic constitutions. The character of the individual and the racial group to which he or she belonged was therefore already predetermined in the biotic plasma out of which it came, and nothing could be done to change or overcome this inherited genetic complex. Moreover - and quite importantly - the various racial types were seen as essentially fixed. Alteration or mutation within these types could occur in only one way, that is, by affecting the genetic constitution itself. This could be done deliberately and selectively in a constructive manner (toward which end the science of eugenics was developed), or could result from what became the quintessential racial nightmare: careless and uncontrolled interbreeding among the races" (Bassin, 1987c, pp. 117/8).

Bassin (1987c), argues that Ratzel rejected this notion of race as it ran directly and explicitly counter to his environmentalist views. Ratzel, according to Bassin (1987c), also had strong views on race and the state. He did not see national unity as a product of ethnic or racial homogeneity, but rather of geographical conditions which create similar conditions of life. He rejected,

> "the conviction that ethnic or racial affinity should somehow serve as the basis for national unity. This so-called Nationalitätenpolitik had by the late nineteenth century come to inspire broad layers of the population in Central and Eastern Europe, and within this context Ratzel's vociferous rejection of it was nothing short of heretical. Rather than strive to include all members of a given ethnic group in one state, he argued, the state should rather seek its basis and boundaries in its geographische Grundlage or the configuration of the physical environment" (Ratzel 1901, in Bassin, 1987c, p. 118)

While Bassin (1987b, 1987c), tries to indicate that imperialism and racism did not fuse in Ratzel's work, Peet (1985) in his article on The Social Origins of Environmental Determinism, argues that it had in fact gone hand in hand. Geography's biological roots, according to Peet, enabled it to serve as a highly significant component of legitimation theory:

> "Environmental determinism was geography's entry into modern science. Determinism attempted to explain the imperial events of late nineteenth and early twentieth century capitalism in a scientific way. Yet, to gain prominent position in the mass reproduction of ideas, geography had also to legitimate intersocietal competition and the conquest of some societies by others. The discipline borrowed from evolutionary biology, the leading science of the day, in formulating its main principles, using the device of the organismic analogy. This analogy proved incapable of capturing the essential, differentiating features specific to human society. It therefore skewed geography in a scientifically unproductive direction. Yet, it continued to be used because of its legitimation function - that is, allowing imperialism to be legitimated as a necessary stage in the evolution to a higher order of existence" (Peet, 1985, p. 310).

Geography, as a science, concerned with the study of man-environment relations, is a product of the late nineteenth and early twentieth century. The organismic analogy was employed to provide the scientific basis for this relationship.

3.4.2 Ecological geography in France : Vidal de la Blache

For many years the French school of geography was dominated by the work of Paul Vidal de la Blache (1845-1918) and his students. Their contributions concentrated on the development of the regional approach in geography. Vidal's ideas, regarding an ecological based regional geography, played a very dominant role in this regard.

The intellectual roots of the French school of geography can be traced to the concern with problems regarding the relationship between society and environment at the turn of the century, especially the debate between Ratzel and Durkheim. The debate concerns two different views of the relationship that exists between society and environment, namely, on the one hand, Ratzel's anthropogeographical approach and, on the other, Durkheim's social morphological view. Both, according to Dietvorst et al (1984) had an organic conception of society. However, Ratzel saw social groups as biological organs within an earthly organism while Durkheim viewed social groups as products of a collective consciousness crystallised in institutional frameworks. Both the anthropogeography and social morphology were concerned with spatial patterns, i.e. the morphology of society. They differ, however, in the extent to which they explain these spatial patterns. Anthropogeography focused on the social group in its physical milieu while social morphology concerned itself with the structure of the group (institutional frameworks and collective consciousness). Ratzel emphasised the

ecological while Durkheim was primarily concerned with the political, juridical and social characteristics of social groups. The extent to which the Anthropogeography-Social Morphology debate influenced Vidal's conception of human geography directly, is not clear although some elements of both are to be found in his work (Dietvorst et al, 1984), especially Ratzel's conception of the relationship man-environment and Durkheim's concern with the existence ("bestaanswyse") of the social group. Gregory described Vidal as the mediator between the two protagonists:

> "He rejected Durkheim's proposed reduction of geography to social morphology by insisting that the human being 'joins in nature's game' and that the milieu externe was a 'partner not a slave in human activity'; and while he shared Ratzel's belief that society ought not to be left 'suspended in the air' he was quick to dispel any lingering determinism by insisting that 'nature is never more than an adviser' and that the milieu interne revealed the human being as 'at once both active and passive'"(Gregory, 1986, p. 360).

The interaction between society and nature was, for Vidal, a dialectical process which is clearly reflected in his concept of the genre de vie, "wherein the moments of a recursive creativity could be both powerful facteurs geographiques and yet also vital agents de formation humaine" (Gregory, 1986, p. 361). Vidal's conception of human geography was to a large extent in accordance with the neo-Kantian philosophy which emphasised the relative freedom and creativity of the human being (Berdoulay, 1976).

This conception of the relationship between society and environment was later endorsed by Lucien Febvre in what he regarded as a possibilist approach: "there are not necessities but everywhere possibilities; and man as master of those possibilities is the judge of their use" (Febvre, in Gregory, 1986, p. 361). Possibilism came to be regarded in a certain sense as the opposite of environmental determinism: "In possibilisme is de relatie tussen mens en natuur tweezijdig. Die mens kiest op grond van zijn genre de vie uit de mogelijkheden die de natuur hem biedt. Zo kan binnen eenzelfde fysisch milieu die ene menselijke groep voor akkerbouw, die andere voor veeteelt kiezen" (Dietvorst et al, 1984, p. 141).

The concept genre de vie found its application in the description of relative homogenous regions in which the spatial organisation is seen as the result of the interaction between the physical milieu and the historical development of the social group. The concept was also subjected to various interpretations over the years. From its original meaning as "way of life" it was later regarded to refer to the struggle for existence and by the Utrecht School of Geography in the Netherlands as the pursuit of prosperity (Dietvorst et al, 1984). These interpretations relate to the distortions of possibilism in the process of defining geography as an autonomous discipline (Gregory, 1986). Despite the fact that Febvre could agree with Vidal as far as the power of human agency is concerned, he still regarded geography as a natural rather than a social science, "possibilism could still legitimately be regarded as a

qualification rather than a negation of environmental determinism" (Gregory, 1986, p. 361). The distinctiveness of geography was held to depend on (and be defined by) the relation between society and nature.

3.5 THE DEVELOPMENT OF BRITISH GEOGRAPHY: MAN-ENVIRONMENT RELATIONS

British geography during the late nineteenth and early twentieth century was characterised by three major themes: commercial geography, the debate regarding a "new" geography, and the delimitation of natural regions. Commercial geography was particularly popular as it attempted to relate differentiations in natural endowment with the spatial concentration of commercial activity. Commercial geography originated as trader's geography ("kaufmannsgeographie") in continental Europe during the eighteenth century. By the early nineteenth century commerce (trade and transport) became a central concern for the developing European empires, with Britain taking the leading role in developing the field of commercial geography: "A major stimulant to commercial geography in the eighteenth and early nineteenth centuries was the development of the British Empire. The exchange of raw materials and manufactured goods between Britain and her far-flung colonies created a need among merchants for additional geographical knowledge of the colonies: the extent of raw materials, the available markets, the existing means of transportation, and the productivity of the people"

(Handley, 1982, p. 174). With the continuing importance of discovery and exploration during the late nineteenth century, commercial geography remained central to imperial expansionism: "Commercial geography was the geography of the age commercial capital. As such it is no accident that it was further developed in Britain, the centre of nineteenth century commercial capital" (Smith, 1990, p. 104).

Commercial geography was initially nothing but facts of production and movement or circulation. Towards the end of the nineteenth century the factual, descriptive and unscientific nature of commercial geography became increasingly unexceptable. Geographers, then, started to look at natural features in their search for explanations for the distribution of industry and commercial activities. Cause-and-effect relationships developed into the central focus of commercial geography, i.e. physical environment to man, environment to products, and products to trade. The popularity of commercial geography reached its peak in the 1920s. Since then there was a sharp decline in its significance, largely due to environmental determinist connotations. It was at first incorporated in but later replaced by economic geography, which was perceived to be more theoretical: "Economic geography was becoming more of a science because of its integration of the economist's principles with the physical environment base" (Handley, 1982. p. 178). The nature of British commercial geography is best illustrated by George Chisholm's Handbook of Commercial Geography (1889). The book did not only consist of a vast amount of information about

world trade, but it also put forward a basic theory which describes such trade:

> "The great geographical fact on which commerce depends is that different parts of the world yield different products under unequally favourable conditions. Hence there are two great results of commerce: the first, to increase the variety of commodities at any particular place; the second, to equalise more or less, according to the facilities for transport, the advantages for obtaining any particular commodity in different places between which commerce is carried on ... the full advantage of nature is not reaped until every kind of production is carried on in the place that has the greatest natural advantage" (in James and Martin, 1981, p. 204).

It was, therefore, expected from the student of commercial geography to deal with landforms, soils, climate, the distribution of water, with minerals, animals and plants, and with routes, cities and countries.

Before, and for some time after its institutionalisation, geography in Britain was taught, at university level, mainly by geologists and natural scientists. Historians were involved only when geography was needed as background for understanding the course of history. In fact, physical geography was regarded as part of geology and was concerned with the study of the influence of the physical features of a country on the people (James and Martin, 1981). According to Archibald Geikie the influence of physical features could be seen: (1) in the distribution and migration of races; (2) in the historical development of a people; (3) in industrial and commercial progress; and (4) in national temperament (in James and Martin,

1981, p. 201). This view was echoed by Mackinder, father of the "new" nineteenth century school of British geography, in 1887, when he addressed the Royal Geographical Society and regarded geography as the field that traces the interactions of man and his physical environment:

> "I propose therefore to define geography as the science whose main function it is to trace the interaction of man in society and so much of his environment as varies locally ... we hold that no rational political geography can exist which is not built upon and subsequent to physical geography. At the moment we are suffering under the effects of an irrational political geography, one, that is, whose main function is not to trace causal relations, and which must therefore remain a body of isolated data to be committed to memory. Such a geography can never be a discipline, can never, therefore, be honoured by the teacher, and must always fail to attract of an amplitude fitting them to be rulers of men" (Mackinder, 1887, p. 143).

As a scholar who was trained in natural science and history, he also held the view that history and geography should never be separated since every event occurred in a particular time at a particular place. For Mackinder, according to Livingstone, geography "found its disciplinary identity in the fusion of the natural and the historical, in the application of evolutionary laws - whether in terms of organic struggle or environmental selection - to history and society." (Livingstone, 1985, p. 126). Mackinder's contribution to the institutionalisation of geography as an academic discipline in Britain is widely acknowledged. He is particularly well known for his conception of geography as a discipline grounded in an environmentalist

philosophy.

The regional approach dominated British geography for much of the first half of the twentieth century. Herbertson succeeded Mackinder as director of the Oxford School of Geography in 1905 and committed himself to improving the teaching of geography. Being very concerned about the encyclopaedic nature of geographic study within the context of political units, he proposed a framework of natural regions for the study of world geography which, like determinism, was an attempt at generalisation. His identification of regions on the basis of combinations of surface features, climate and vegetation indicates the link between his work and the earlier determinism.

James and Martin (1981, p. 206), identified five characteristics of British geography in the post-World War I era, namely: (1) a concern with exploration; (2) an emphasis on regional studies; (3) a focus on field observation and map interpretation as essential parts of training programs; (4) historical geography and the history of geography; (5) a concern with the solution of practical problems. The classification of regions in particular was a very important academic activity. Following Herbertson's work on natural regions, Marion Newbigin, under the influence of Vidal de la Blache, Lucien Gallois and Jean Brunhes, regarded the classification of regions to be based on the kind of relationships observed between human communities and their natural surroundings within the context of the concept genre de

vie (James and Martin, 1981). Her ideas were further developed by H J Fleur. J F Unstead proposed a classification of regions in line with his concept of a uniform unit of area which would incorporate homogeneous associations of physical and human factors: "The idea is logically derived from the theory that the way people live is a reflection of their natural surroundings. According to this theory an area that is homogeneous with respect to its natural features will also be homogeneous in the ways people adjust to these features" (James and Martin, 1981, p. 214)

3.6 **SUMMARY**

The review of the history of geography has shown that it is not possible to extract the substance or essence of geography from the broader social, religious and ideological networks in which it is embedded. Before the institutionalisation of geography as an academic discipline, geographical writing was strongly influenced, and to some extent restricted, by a teleological view of nature. This view dominated geographical writing until the death of Humboldt and Ritter. Although other views existed, geography was mainly regarded as having value only in as far as it could provide proof of divine Providence. Efforts to establish a more scientific geography during this period were never really successful. Description and inventarisation remained the essence of geographical writing well into the nineteenth century. Although geography was, as yet, not a

recognised academic discipline, it was a widely taught subject, in most instances in combination with and subsidiary to other disciplines such as history and geology.

The late nineteenth century saw geography being institutionalised as an academic discipline. Geography was seen to be ideally suited to serve the needs of the middle and upper classes and to explain, in a scientific way, nineteenth century imperialism. This was best done via Ratzel's anthropological conception of geography. Ratzel's ideas regarding the relationship between man and his environment, which were rooted in Darwinism, formed the foundation of geography for many decades, not only in Germany but also far beyond its boundaries.

Not all scholars were impressed by Ratzel's deterministic views. In France, Vidal de la Blache developed a geographical perspective which, to a certain extent, could be seen as being opposed to Ratzel's anthropogeography. His concept of genre de vie allowed more freedom to man in his relationship with the environment. While the determining role of the environment was still evident in the work of Hettner, Schlüter endeavoured to provide an alternative basis for scientific geography. He moved away from "relation geography" and developed the conception of geography as being the study of the landscape. Schlüter's work formed the basis of a strong tradition by the turn of the century.

The development of British geography is to a large extend rooted

in the various French and German traditions, although its contributions to the development of the discipline were unique in many ways. Until at least the early years of this century British geography was clearly dominated by a more physical orientation with a strong emphasis on deterministic explanations of man-environment relations.

This chapter endeavoured to present a history of geography which would provide the context for comprehending the history of geography in South Africa. Before the establishment of geography departments in South Africa, geography existed as an official school subject for more than three quarters of a century. Our understanding of academic geography in South Africa could therefore not be complete without reference to its pre-academic roots. In the next chapter the focus will therefore be on the history of pre-academic geography in South Africa.

4. COLONIAL SOCIETY, EDUCATION AND THE DEVELOPMENT OF PRE-ACADEMIC GEOGRAPHY IN SOUTH AFRICA

4.1 INTRODUCTION

Geography existed as a school subject long before it was a recognised discipline at university level. It was, in fact, one of the first subjects to be introduced when the first Education Department was established in the Cape Colony in 1839. This chapter traces the history of geography in South Africa prior to its recognition as an academic discipline by the University of the Cape of Good Hope during the second decade of this century. A knowledge of the history of pre-academic geography during these years is deemed necessary in order to fully appreciate the stimuli that led to the institutionalisation of geography as an academic discipline. The history of school geography is relatively well documented (Webster, 1939; Botha, 1948; Knox, 1958; Van der Merwe, 1982; Levy, 1984; Clark, 1989). Since the middle of the previous century, the changing role of school geography within the process of curriculum development in South Africa must be seen within the context of general educational development. Geography, as a school subject, cannot be studied in isolation because "it is inevitably part of the whole education system, which is itself part of the social and economic environment in which it evolves" (Levy, 1984, p. 7). In this

chapter, the history of geography teaching in South Africa is, therefore, discussed against the background of an evolving educational system during the period of colonialism.

4.2 COLONIAL SOCIETY AND EDUCATION IN SOUTH AFRICA

Education in South Africa has developed in a unique manner because of particular political-economic developments and can, therefore, not be divorced from a broader understanding of the history of the South African state. Two distinct periods, through which the South African state has developed, can be identified: (1) a period of colonialism (1652-1910) and (2) a post-Union (from 1910) period. The period of colonialism can again be divided into two phases: (1) the Dutch occupation of the Cape (1652 - 1806), and (2) the period of British control (1806-1910). Much of what we regard as our educational system today is derived from the way the country was colonised and from the social pressures initiated by colonisation: "There is perhaps no country in the world where the educational system has had so many buffetings and tamperings from without as the education of South Africa. At no period was education to any extent the spontaneous expression to the ethos, or genius, of the people. It was to a very large extent the resultant of successive superimpositions of systems or bits of systems from without" (Malherbe, 1975, p. 7).

4.2.1 Moral-religious principles in early Dutch education at the Cape

In view of the needs of metropolitan accumulation the Dutch settlers were mainly concerned with the establishment of an economically viable community at the southern tip of Africa. This had occupied their endeavours to such an extent that formal education was not regarded as a priority. Early in the nineteenth century, 150 years after "volksplanting", Governor Jansens, after travelling through the interior established that, "... dit aan opvoeding en onderwys jammerlik ontbreek het en het aan die hand gedoen dat sowat 'n dosyn skoolmeesters uit die moederland bekom moet word" (Du Toit, 1963, p. 33). The kind of formal schooling that was available was to a large extent religious in nature and under direct control of the church: "The object of schooling was to prepare children for their admission to the Dutch Reformed Church. ... School curricula in Dutch education provided no more than a basic preparation of the child for participation in public worship" (Levy, 1984, p. 12). The Dutch settlers brought with them to the Cape a tradition of religious education which "was based on the idea, with its roots in the Middle Ages, that all aspects of life, including education should be regulated in accordance with the law of God" (Behr and MacMillan, 1966, p. 3).

Towards the end of the seventeenth century, separate subjects could hardly be identified, although general reference was made to reading, writing and Christian instruction ("Christelike

leringe"). With the advent of the eighteenth century several public and private schools existed but without any meaningful control. The promulgation of the Ordnance of De Chavonnes in 1714 was a first attempt at educational legislation. The Ordnance was characterised by the importance afforded to religion and the stipulation that no books other than those from The Netherlands should be used (Du Toit, 1963). No dramatic changes in the field of education were recorded for the rest of the century. During the short period of British control (1795-1803), little attention was given to education as the British were too involved with political problems. The fact that the British did not know how long the occupation of the Cape Colony would last also contributed to the fact that education was not actively promoted.

After the return of the Cape to the Batavian Republic in 1803, Jacob de Mist was appointed Commisioner-General. He was very concerned about the state of education in the colony and he immediately started to work on a new education policy. In the Ordinance of 1804 he recommended, among other things, the importation of teachers from The Netherlands and he also promoted, very strongly, the idea of secular schools. It is also important to note that De Mist made provision for the teaching of geography at both his envisaged training school for teachers and his boarding and day schools. His plans, however, never materialised: "The whole education scheme proposed by De Mist in the 1804 School Ordinance was far in advance of the accepted practice of his day, and was never put into practice" (Levy,

1984, p. 17).

After more than 150 years of Dutch-Religious Education transplanted from The Netherlands, the country was on the point of working out an "indigenous" system, when an English system was introduced.

4.2.2 British colonisation: Anglicisation of education under British rule and Boer reaction

British colonial policy in South Africa greatly enhanced the processes which shaped the terrain of social relations and education in South Africa. Shortly after seizing the Cape, the colonial authorities promoted large-scale migration from Britain, and introduced a strong anglicisation policy. Since 1806 there was a deliberate attempt by the British to promote English as a medium of instruction. To this end, several teachers were imported from Scotland and England in order to gradually replace the Dutch teachers (Du Toit, 1963). At the insistence of Governor Lord Charles Somerset the first six imported teachers arrived at the Cape in 1813. Among them was James Rose-Innes who was to become the first Superintendent General of Education in the Cape Colony. They were expected to teach the following subjects: writing, arithmetic, sacred music, religious principles according to the Dutch or Scottish catechism and English language.

It was, however, not until the 1820s that a system of secular

schools in the British tradition, sponsored by Somerset, was instituted (Behr and MacMillan, 1966). In the mean time there was a dramatic increase in the number of school subjects that were taught. By 1833 the following subjects were taught: Dutch, English, Latin, Greek, French, German, Geography, Astronomy and Mathematics. In the senior division provision was also made for nature studies, logic and psychology to be taught (Du Toit, 1963) The Dutch settlers were strongly opposed to the anglicisation of education, to such an extent that it led to the decline of several schools, and even the closure of some, especially in the rural areas.

In response to a memorandum on the public schools of the colony prepared by Colonel J Bell, then secretary to the government, and the advice of Sir John Herschel, the first education department was established in 1839. This clearly signalled the transfer of responsibility for education from church to state and could be regarded as the greatest single step in the process of educational control in South Africa (Levy, 1984). Rose-Innes remained committed to the policy of anglicisation, as were his successors, Langham Dale (1859) and Thomas Muir (1892).

The exodus of Voortrekkers to Natal, the Orange Free State and the Transvaal, was partly in response to the anglicisation of society at the Cape. However, not even in these new territories, were the Boers afforded the opportunity to develop their own educational system. The early development of education in Natal was severely hampered by two factors (Buys, 1963): (1) the

conflict with the Zulus occupied much of the time and effort of the Voortrekker, (2) the conflict between themselves and the British, who eventually annexed Natal between 1843 and 1845. Natal was governed as a dependency of the Cape Colony until 1856 when it became a separate colony with a partially nominated legislative council. In 1858, a Board of Education was established which recommended a secular system of education. Formal education in Natal began in 1859 with the appointment of Dr Robert Mann as the first Superintendent of Education. He was especially interested in promoting the natural sciences in education while deliberately continuing with the anglicisation policy. His successor, Robert Russel (superintendent between 1876 -1893), followed closely in his footsteps. In 1893 the Colony of Natal received its own responsible government. Malherbe (1975) is of the opinion that Natal is unique in the sense that it alone has had a relatively uninterrupted English system of education.

In the Boer Republics much was done to establish an educational system to serve the needs of the Boers. Religion remained a very important dimension of Boer life and it also formed the foundation of the education they provided for their children. However, in both the Orange Free State and the Transvaal, education was eventually controlled directly by the British. In the Orange Free State a new education ordnance was implemented in 1874, and a Scotsman, Dr John Brebner appointed as Superintendant of Education who developed an educational system not unlike that of Scotland, with respect to content, method and organisation (Malherbe, 1975). With the revival of Afrikaner

Nationalism since 1896, there was an outcry in favour of an education with a larger national content and the maintenance of the rightful position of Dutch/Afrikaans in the schools: "Die 'neutrale' onderwys van Brebner is nie meer aanvaar nie en daar is al meer toegegee aan die eise van die ouers dat hul kinders op skool met vaderlandsliefde en 'n liefde in die Taal besiel moet word" (Van Schoor, 1963, p. 152). This tendency continued under the presidency of M T Steyn but ground to a standstill with the declaration of war in 1899: "'n Nuwe vergesig op onderwysgebied was aan die ontluik, maar met die uitbreek van die oorlog in 1899, was haas net die fondamente gegrawe wat hierdie visie in die praktyk ten grondslag sou lê" (Van Schoor, 1963, p. 162). Under the British Military administration (after the war) the old School Law of the Orange Free State was abolished and a deliberate policy of anglicisation was followed.

Education in the Transvaal was afforded priority status after the introduction of the constitution of the Zuid-Afrikaansche Republiek in 1858. One of the first signs of formal education was the setting up of a School Commission in 1859. It was expected of teachers to be members of the Dutch Reformed Church and be able to give instruction in Bible history, reading, writing, arithmetics, geography and singing (Levy, 1984). The Boers' endeavour to establish their own educational system was seriously interrupted when the Transvaal was annexed by the British for a period of four years between 1877 - 1881, and again with the outbreak of the Anglo-Boer War.

The Boers refused to accept an anglicised educational system. Schools based on the philosophy of Christian National Education (CNE) were seen to be the alternative. The idea was also propagated in Natal and the Orange Free State. When the Transvaal became a free Boere Republic again in 1881, the ideas of CNE were revitalised and the ideals promoted by the "Algemene Kommissie tot behartiging van die CNO": "Dit was in gees, rigting en aard geskoei op die onderwys volgens die ou onderwyswette ... vry van beheer en inmenging van die kant van die nuwe Engelse owerheid en Christelik-Nasionaal in gees en strekking. Dié soort onderwys sou voortbou op die verlede, op die godsdiens, die taal, die geskiedenis en die kultuur van die oorwonne Boerenasie" (Coetzee, 1963, p. 304).

Ds S J du Toit (from the Paarl) was invited to fill the post of Superintendent of Education. He accepted the invitation and saw it as an opportunity to promote his ideas of Christian National Education, "'n soort onderwys eie aan die Boerevolk" (Coetzee, 1963, p. 289). This was based on the principle that education was the responsibility of the church and the parents and not of the state. Du Toit's ideas were eventually embodied in Act No 1 of 1882.

Shortly after the occupation of the main urban centres in the Transvaal by the British troops in 1900, E B Sargant, an expert on education in the different English colonies, was requested to come to South Africa. He found education, especially for the youth to be in a very bad state and he started a program of

importing English teachers. During the first four months of 1902 more than 200 English teachers arrived in the country. After the two Boere Republics became colonies on 31 May 1902 the British began to deliberately anglicise education: "Die Hollandse gees, rigting en inslag is deur 'n Engelse stelsel vervang. Die ou stelsel van staatsondersteunde CNO-skole moes plek maak vir 'n stelsel van vrye (liberale) nie-sektariese, nie-verpligte staatskole" (Coetzee, 1963, p. 297).

In 1903, in opposition to the anglicisation of education the "Algemene Kommissie" issued a regulation stating that education remained the task of the parents, and also a curriculum for C.N.E schools. The compulsory subjects were:

Biblical history	Singing
"Aanskouingsonderwys"	Recitation
Dutch	History
Writing	Geography of South Africa
Arithmetic	English

Self government was granted to Transvaal in 1906. J C Smuts was appointed as Colonial Secretary and Minister of Education in 1907 and in the same year he introduced a new constitution for education. He maintained the British principle of public education, namely that it is the concern of the state. He rejected the Afrikaans principle of state supported schooling. On his request many of the C.N.E schools were closed and transformed into state schools.

This brief review of the history of education in South Africa until the early years of this century, revealed (1) the Boers' strong affinity for moral-religious principles in education, and

(2) the relentless endeavour of the British to anglicise education and with it society, in order to establish hegemonic control. This resulted in a great divide between Boer and British which was manifested in the establishment of CNE schools. Geography has always been part of this evolving educational system in South Africa. The next section deals, in more detail, with the history of school geography.

4.3 GEOGRAPHY AS A SCHOOL SUBJECT : THE FIRST WAVERING STEPS TOWARDS AN INSTITUTIONALISED DISCIPLINE

4.3.1 Cape colonial roots

Education in the Cape was formally structured in 1839 with the establishment of the Cape Education Department under James Rose-Innes. In a Memorandum on Education issued by Colonel Bell on 23rd May (Cape of Good Hope, 1839), geography was granted official status in the curriculum for the elementary school. It was one of ten subjects which included:

Reading	Arithmetic
Descriptive geography	Writing
General history	Natural history
Linear drawing	Grammar
Religious instruction	Physical science

Geography, together with the other subjects, was to provide the basis for a "liberal education". According to Bell's Memorandum it was "the intention to make provision for instruction in those

branches of knowledge which constitute a liberal education - it was seen as part of the necessary foundation for such studies" (in Clark, 1989, p. 47).

However, there is evidence that geography was taught in the Cape Colony long before it was officially recognised as a school subject by the British authorities. Of particular interest is the fact that geography was officially incorporated in the school curriculum at the Cape, before its official recognition as a school subject in England (Clark, 1989).

4.3.1.1 Geography before its status as an official school subject

The earliest recorded instance of instruction in geography goes back to 1772, when Andrew Sparrman, a Swedish naturalist and explorer, was appointed private tutor to the children of the Lieutenant Governor. Towards the end of the eighteenth century and also during the period of the Batavian Republic, geography was taught in a few Dutch private schools. The first school in which geography was taught was a private one established by Jacob Ziegler in 1794. Geography was one of several other subjects namely Dutch, French, history and the elements of physics and mathematics. Although geography was never taught at any of the official schools of the eighteenth century it is important to mention that there were attempts to introduce geography as an official subject. In 1790, the Scholarchs contemplated the

introduction of geography in official schools. With a sum of money raised voluntarily from the European Colonists they envisaged three types of schools (Levy, 1984): Dutch schools for the lower class, second class or French schools and the higher or Latin school. According to Levy (1984), the inclusion of geography as a subject in the second class or French schools was probably the first time geography as a specific and separate subject in the schools in the Cape Colony was mentioned. Their plans did, however, never materialise. The success of the plans was being hampered by the English occupation of the Cape in 1795: "the difficulties arising from the introduction of a new language and submission to new authorities did not allow for the favourable progress of the education work which had just been commenced" (Cape of Good Hope, 1863). During British occupation (1795-1802) the status of geography remained the same.

During the time of the Batavian Republic the situation changed somewhat. Based on a careful investigation into, among other things, educational matters, De Mist produced a report in 1802 in which he recommended several courses for instruction: reading, writing, the first and most simple rules of arithmetic and the principles of geography. According to Knox: "It is interesting to note that apart from the three R's, geography was the only subject suggested; and it seems permissable to infer from this that De Mist conceived [geography] to be a subject of considerable importance" (Knox, 1958, p. 10).

There are indications that geography was unofficially taught at

some government and church schools between 1806 and 1839, albeit in combination with other subjects. In such schools "geography was taught by teachers who had the enterprise to teach outside the limits prescribed by the official syllabus" (Knox, 1958, p. 25). One government school at which geography was taught at this time, was Rose-Innes's school at Uitenhage. In a report, submitted to the Bible and School Commission in 1824, it is stated: "Besides the pupils who received the ordinary instruction at this school there was a separate or private class, consisting of six boys, who were instructed in geography, Latin, and other branches of more elevated education" (Cape of Good Hope, 1863). Geography was also taught at the South African College. The college was established in response to a demand among the colonists for secondary and higher education for their sons (Knox, 1958). Geography was one of the elementary subjects in the science department. According to the 1831/32 time-table, geographical instruction was the responsibility of the Professor of Mathematics (Rose-Innes). Geography was, however, not confined to "mathematical geography". Instruction was also to be given in "Ancient and Modern Geography and the use of the Globe". Other schools at which geography instruction was given included the Grahamstown Free School, the Academy, the "Grammar School", and the School Tot Nut van 't Algemeen.

A major problem regarding the teaching of geography during this time was the lack of textbooks and especially material pertaining to local conditions. Some of the more popular textbooks that were available included:

Goldsmith, J. (1808): Geography on a Popular Plan

Gordon, P. (1749): Geography Anatomiz'd

Guthrie, W. (1771): A New Geographical, History and Commercial Grammar

Reflecting on the nature of the history and geography which were taught, MecKerron writes:

> "The history was usually classical or English history, and the geography course bore no reference to South Africa. Even if the teacher had wished to include South African history or geography he would have found it very difficult to do so, for there was very little material available for this work. History and geography might be taught from books arranged entirely in the form of question and answer. Very often the pupils were expected to learn these answers by heart." (in Knox, 1958, p. 26).

4.3.1.2 The Introduction of geography as an official school subject

With the establishment of the Cape Education Department, the teaching of geography was limited to schools in the major urban centres. The teaching of geography in rural areas was virtually non-existent and the content of geography was mainly physical and mathematical. The introduction of geography could, according to Clarke (1989), be ascribed to two prominent personalities at the Cape during the first half of the previous century, namely Sir John Herschel and James Rose-Innes. Herschel, an astronomer, resided at the Cape (1834-1840) and was consulted by the

government on educational matters. In 1835 Herschel described the ideal curriculum as being: "The nature and constitution of the world we inhabit - its relation to the planetary and the universe - the animal, vegetable and mineral productions with which it teems - and their uses as subservient to the wants of man" (in Levy, 1984, p. 20). He included geography in the comprehensive curriculum he envisaged for South African schools and recommended that the following aspects of geography be taught (Levy 1984):

Political Geography:	Ancient Maps
	Modern Maps
Physical Geography:	Form of the Earth
	Traces of its former condition
	Natural Subdivisions
	Climate
	Atmosphere, seas, tides, winds

The curriculum which Rose-Innes presented to the authorities in 1839 was similar to the one he taught at Uitenhage, which included geography (Clark, 1989). Geography was to be offered in both the junior and senior divisions of the elementary course. In the junior division geography instruction consisted mainly of mapping exercises on the maps of the "primary divisions of the world" and descriptive geography, the former referring to the continents while the latter was confined to descriptive details of purely factual nature: "... and since the instruction was largely confined to mapping exercises, it seems likely that this junior course demanded little more than the ability to point out topographical features on the map" (Knox, 1958, p. 36).

In the Senior Division the course contained a "full course of descriptive geography" as well as illustrations of the figure and motions of the earth, and its chief physical appearances (e.g. rivers, lakes, mountains, plateaux and plains as well as the motions of the earth, day and night and the seasons). As far as the quality and content of geography teaching was concerned, one has to keep in mind that teachers were generally poorly trained during the early nineteenth century and that the nature of the geography that was taught was merely a reflection of the nature of school geography in Europe during the greater part of the nineteenth century. After a thorough analysis of the textbooks as well as examination questions, Knox (1958, p. 47) came to the following general conclusions regarding the teaching of geography at the Cape:

- The geography which was taught was largely non-human, topographical, and factual, and was ill-defined in scope in so far as it involved miscellaneous facts of a non-geographical nature.
- The human aspects that were taught were factual and topographical[1] in content.
- The mathematical and physical branches of the subject were treated as being self-contained and they were not related to the nature of the cultural landscape and of the human activities.

[1]This refers to work which merely calls for memorization. It includes definitions of geographical terms and questions such as: What are the main agricultural products, for example, of Chili? Where are gold and diamonds found?, etc.

- Illustrative material in the textbooks was totally absent.
- The study of the pupils' homeland was almost entirely neglected.

Clark's understanding of the origin of geography as a school subject in South Africa does not, however, reflect the underlying reasons for its introduction. There was a fundamental link between the introduction of geography and the needs of the British Empire. School geography was regarded as a valuable tool in the promotion of imperialist sentiments. With the abolition of slavery in the British Empire in 1833 - 1840, the Colonial Office advocated appropriate education. The English language as the most important "agent of civilisation" for the coloured population, together with religious education and knowledge useful to small farmers were particularly emphasised (Hudson, 1991b). The Colonial Office distributed a circular in January, 1847, in which it is stated that "The lesson books of the colonial schools should also teach the mutual interests of the mother country and her dependencies; the rational basis for their connection ..." (in Hudson, 1991b, p. 10). Such a request, as far as geography is concerned, makes sense when it is realised that the Royal Geographical Society was established in 1830 on the explicit grounds that geography's "advantages are of the first importance to mankind in general, and paramount to the welfare of a maritime nation like Great Britain, with its numerous and extensive foreign possessions" (from the Journal of the Royal Geographical Society, in Livingstone, 1991, p. 5). The nature and content of geographical education were therefore

finely attuned to the needs of the British Empire.

4.3.1.3 **Development and change in geographical education**

Geography during the mid-nineteenth century, did not occupy a very prominent position in the schools of the Cape Colony. In the first annual report of Rose-Innes in 1858 no discussion or criticism of the subject appeared. It simply noted that geography was included in the curriculum of most schools (Levy, 1984, p. 56). After the succession of Rose-Innes by Langham Dale in 1861, the government appointed a commission to investigate educational matters. The Education Act of 1865, the result of the commission's work, made provision for "Descriptive Geography". Geography was then taught in two standards:

Standard 3 - Definitions and the Map of Africa
Standard 4 - The world generally and South Africa specifically

According to Knox (1958) the Standard 3 course could probably involve nothing more than a knowledge of the political divisions and topographical features of the continent and the ability to indicate these on a map. The Standard 4 course was unique in the sense that it was the first time that a study of the mother country was specifically mentioned.

After an inspectoral tour by Donald Ross, who was brought out from Scotland in 1882, the curriculum for geography changed substantially (Knox, 1958). His suggested curriculum for geography was as follows:

Std 3 - Outlines of the geography of the Cape
Std 4 - Outlines of the geography of Great Britain
Std 5 - Outlines of the geography of Europe
Std 6 - Outlines of general geography

Ross's curriculum differed significantly from that of Dale in the sense that it commenced with the study of the homeland. It is also interesting to note that much emphasis was placed on the geography of Europe and in particular Great Britain. Initially, only the courses for Std 3 and 4 were implemented. The fifth class was added in 1885 and the geography syllabus focused on physical and political geography of Europe. In the sixth standard, which was added in 1887, no geography was offered. Knox (1958) argues that during this time, there was a dire need for increased attention to Natural Sciences, and especially to those branches which had a direct bearing on the practical industries of colonial life. Dale's exclusion of physical geography from among the optional, natural sciences prescribed for Std 6 could therefore, according to Knox (1958) be accepted as evidence that he did not have a high opinion of physical geography as a natural science, neither conceived it to be one of the sciences with a direct bearing on the practical industries of colonial life. However, it has to be kept in mind that geography had just proved it scientificness in Western Europe during this time and that geography's contribution to the "practical industries of colonial life" was seriously debated in Europe but also in South Africa (see chapter 5).

4.3.1.4 The precarious status of geography as a subject at senior level

Secondary school geography did not exist, although geography of secondary standard was offered by the Board of Public Examiners in Literature and Science (previously the Cape Public Service Board) in 1858. Geography of secondary school standard was initially for the Public Service Certificate and after 1863 it was a subject for the Third Class Certificate in Literature and Science. The certificate was designed to correspond to the Matriculation examination of London University. The focus was on physical geography - in particular climatology and oceanography. This was combined with an optional course in physical science. In 1873 the examining power of the Board was transferred to the newly-constituted University of the Cape of Good Hope, modelled on the University of London, which dominated the scope and nature of secondary education in the Cape. It was purely an examining institution which determined standards, drew up syllabi, set examinations, and awarded degrees and certificates.

The Board of Public Examiners were responsible for two examinations: the Public Service Examination and the examination for the Third-Class Certificate in Literature and Science. The former was the qualifying examination for entrance to the Civil Service and included:

- outlines of the English Constitution or a portion of the outlines of the history of English Literature;
- Latin, Mathematics;

- one of the following subjects in Physical Science: Physical Geography, Geology, Botany or Chemistry;
- one of the following languages: Dutch, German or French.

Within the mixture of these courses, physical geography was prescribed as one of the optional courses in physical science. Considering the questions that were set for this examination between 1860 and 1864, Knox (1958) could establish that the majority of questions were set on the aspects of physical geography connoted by the terms "climatology" and "oceanography". Less than 20% of all questions were set on geomorphology and on flora and fauna. Mathematical and local geography were largely ignored. Knox (1958) also noted that most questions demanded some degree of reasoning or explanatory treatment: "We may therefore conclude that the examinations for this Certificate discouraged a predominant concentration on the memorising of factual details, and consequently stimulated an intelligent approach to physical geography" (Knox, 1958, p. 73). The Public Service Certificate was superseded in 1864 by the Third-Class Certificate in Literature and Science. Courses prescribed for the latter examination were almost identical to those prescribed for the former.

The University of the Cape of Good Hope controlled three papers: Matriculation, the School Examination for Honours, and the School Higher Education. The regulations for the matriculation examination were published in the 1875 University Calender and were as follows (shortened):

Languages, literature and History
- The English language and its history.
- The history of England and modern descriptive geography.
- The Greek and Latin languages: one Greek and one Latin subject to be notified by the council. ... The papers will also contain questions on the grammar of the languages, on Grecian and Roman antiquities, history and geography, as connected with the subjects named for examination.
- Modern languages: Dutch, French, German.

Mathematics

Physical Science
- viz. physical geography, or geology, or chemistry, as may from time to time be notified by the council.

Two points need to be highlighted in connection with the above regulations: (1) there is a clear distinction made between what is termed "modern descriptive geography" and "physical geography". Here, for the first time, there is explicit reference to a conception of geography whereby a descriptive aspect of the subject with human reference is prescribed for study in complete isolation from physical geography. The latter, which is the non-human basis of geography, is elevated to a place among the natural sciences. There are, therefore, two self-contained courses of study. This conception of geography also found its way into the School Elementary Examination in 1880 (UCGH, 1880, p. xcix) in which provision was made for the "Outlines of Geography, Descriptive and Physical". (2) the status of the two sections differs considerably. "Modern descriptive geography" was compulsory while physical geography was set down as one of the three sciences which were to be alternatively studied for matriculation as may from time to time be notified by the council (Knox, 1958). Physical geography was prescribed for only one year, namely for 1874. In 1881, physical geography was eliminated from the syllabus, while

descriptive geography continued as a compulsory subject until 1884, when it too was abolished. Thus, during the entire period between 1873 and 1884, when geography figured in the syllabus, only the matriculation students of 1874 were able to study both physical and descriptive geography. An analysis of the paper set for physical geography in 1874 reveals a focus on geomorphology, climatology and oceanography. The papers on descriptive geography reflect an emphasis on factual knowledge of natural topographical features such as river courses, capes, bays, gulfs, islands and mountains, and topographical features of the humanised landscape such as towns, countries and subdivisions of countries.

Subjects for the School Examination for Honours (introduced in 1881) were grouped into two categories (UCGH, 1881), i.e. Literature and Science. Only physical geography was offered in the science category and consisted mainly of climatology, geomorphology and oceanography. Other aspects dealt with were map-drawing, mathematical geography and ethnography - a geographic study which does not properly fall within the scope of physical geography at all. When in 1887, the School Examination for Honours was renamed the School Higher Examination, physical geography was again included as a science in the science category. There was no substantial change in the content of the course. It was, however, accorded the status of a full course.

Based on an analysis of examination papers Knox (1958) came to

the following conclusions regarding the content of geography during this time:

- Secondary instruction was very largely confined to physical geography, and no attempts were made to correlate descriptive and physical phenomena.
- In all the papers on physical geography a sound balance was, however, maintained between questions which demanded a mere knowledge of facts and those which require an intelligent grasp of principles and relationships.
- While the examination papers which the Board of Public Examiners in Literature and Science set on physical geography dealt mainly with climatology and oceanography, the physical-geography papers of the University of the Cape of Good Hope were largely climatic, oceanographic and geomorphological in scope.
- Mathematical geography was either completely neglected or very inadequately stressed in the geography instruction of secondary standard.
- No clearly-conceived ideas existed about the scope of geography. There was a tendency to incorporate non-geographical subject-matter in geography courses.
- Descriptive geography was taught without any reference at all to the supporting framework of physical phenomena.
- Map-drawing seemed to have been largely neglected.
- Inadequate attention was given to illustrative diagrams.
- Inadequate attention was given to the geography of South Africa and local geography.

4.2.1.5 **The marginalisation of geography as a school subject**

When Muir took over as Superintendent General of Education in 1892, the courses in and content of geography changed substantially. This change was in line with a stated objective in the Superintendent-General's report of 1894 which stated that from 1 January 1895 new standards were to become effective and that subjects were to be looked at from a South African as well as a cosmopolitan stand point:

Standard 2 : To know the chief natural features of the country in the vicinity of the school; to know the cardinal points; to draw a plan of the schoolroom; to be familiar with a plan of the immediate neighbourhood of the school

Standard 3 : To know the mode of representing on a map the different surface features; to be familiar with a map of the Division in which the school is situated, and with the position of the Division from memory.

Standard 4 : The form of the Earth; Day and Night; Latitude and Longitude. To know the map of the Cape Province, including features of coastline, railways, situations and chief industries of towns having over 2,000 inhabitants. To draw said map from memory. Position of South Africa on the Globe. Names and situations of the various continents and oceans.

Standard 5 : The Seasons. Africa and Europe, including features of coastline, chief states or territorial divisions and their capitals; situations and chief industries of towns having over 250,000 inhabitants; commercial relations with the Cape Province. Map-drawing from memory.

Standard 6 : Climate, Winds, Rainfall. Asia and America, including features of coastline, chief mountain ranges, chief rivers and their basins, chief states and their capitals, situation and chief industries of towns having over 200,000 inhabitants; commercial

relations with the Cape Province. Map-drawing from memory.

Standard 7 : The chief Ocean Currents. The British Isles, British Colonies and Dependencies in greater detail. Map-drawing from memory.

There was a general expansion in the content of the syllabus. The lessons were characterised by an emphasis on map work and on physical and regional geography. In the higher standards lessons in commercial geography and on the geography of the empire were included.

During the years of Muir, geography of secondary standard was almost non-existent. Since 1899, physical geography featured as an optional subject but was dropped from the School Higher Examination in 1901. It was also excluded from the new University Junior Certificate which replaced the Higher Examination in 1910 (Clark, 1989). After this year, geography in all its aspects was excluded from the curriculum. Geography also found no place in the requirements for matriculation. Although the history course involved "related Physical and Political Geography", it was merely as a means of serving the ends of historical interpretation. Muir was clearly dissatisfied with this neglect of geography at the Matriculation level. In his report of 1912 he commented as follows:

> "It is laid down that the History course shall include related Physical and Political Geography, but this means very little in actual practice. It must be admitted that Geography does not receive in the Matriculation Examination the attention the importance of the subject deserves. Our high school pupils go out into the world with a much broader and more intelligent outlook if their two subjects, History and

> Geography, were placed on a sounder basis and were examined separately. Geography, if well taught, is one of the most illuminating of school subjects" (Cape of Good Hope, 1912, p. 34).

From 1901 geography found no place in courses of study prescribed for the secondary examinations of the University, and was, accordingly, "relegated to a position of utter neglect in the secondary sphere of Cape Education" (Knox, 1958, p. 132).

Despite the elaborate syllabuses, the scope and nature of geography under Muir did not differ substantially from that which was taught under Dale. Geography was still predominantly concerned with the rote-learning of facts and definitions:

> "To most the teaching of geography means defining the commonly used geographical terms often in formal language not understood by the pupil. This is the initial stage. Then follows the burdening of the memory with names of places, rivers, mountains, etc. which are not made to have some living connection in the minds of the pupils with something interesting" (Le Roux, 1893, p. xxxiii)

There were, however, some teachers who employed their own initiative to make geography an interesting subject to teach: According to an inspector report in 1907 "a few of the more intelligent teachers do, however, try to give the subject a living interest by showing the children the relations existing between their own districts and the other parts of the country and between one country and another" (in Knox, 1958, p. 137). Generally, the teaching of geography during the period under Muir continued to be most unsatisfactory, especially in rural schools. The absence (officially) of geography from secondary

schools as well as post-matriculation courses of study at colleges could be regarded as the main contributory factors in this regard.

Having reviewed the history of geography in the Cape Colony it became clear that geography could not establish itself as a subject beyond the elementary school level, despite the fact that the Cape Education Department regarded geographical knowledge as of fundamental importance in the educational system. While reference has already been made to some factors which could have contributed to this state of affairs, for example poorly trained teachers, it is clear that there may be other factors involved. The next chapter will deal with this issue in more detail.

Information on the teaching of geography in the other territories is, according to Levy (1984), not readily available, However, the nature and scope of the geography that was taught in the Cape Colony seemed to have provided the framework within which the subject was taught in Natal and in the Boer Colonies.

4.3.2 **School geography in Natal**

While the geography which was taught in Natal did not differ much from that in the Cape Colony, it took much longer to be officially recognised in Natal schools. It originated as one of the subjects offered by the public school in Pietermaritzburg in

1849. After the independence of Natal in 1856 and the establishment of the Education Department in 1858 there was no significant change in the status of geography. Under R J Mann, the first Superintendent of Education, geography was planned for both primary and advanced education (Botha, 1948). However, nothing really materialised from this planning.

It was only in 1877 that the Education Law no. 15 provided for elementary geography as one of the subjects in primary schools. Political and physical geography (in particular that of South Africa and the British Empire) was recommended as a primary school subject (Botha, 1948). The first curriculum for geography was issued in 1876 (Behr and MacMillan, 1966):

Std 3 - Leading physical features of the world. Chief countries and cities
Std 4 - As for Std 3 but more detailed and South Africa in particular
Std 5 - As for Std 3 but more detailed plus the outlines of meteorology and astronomy (physical geography)
Std 6 - As for Std 3 but more detailed plus manufacturers and commerce. Children also had to draw from memory a map of one of the continents

The curriculum was revised in 1885. Geography was then also a subject for Std 2 (Botha, 1948):

Std 2 - Geographical terms simply explained. Point out continents and oceans.
Std 3 - As for 1876
Std 4 - Detailed physical and political geography
Std 5 - More detailed physical and political geography, Natal and South Africa particularly. Latitude and longitude, day and night. The seasons.
Std 6 - As for 1877 plus circumstances which determine climate.

By 1899 geography was taught from standard 1 to 7 (Clark, 1989).

This curriculum remained valid until 1903. There were no major changes except for geography in Std 6 where more emphasis was placed on the "Geography of the British" (Levy, 1984). The new curriculum remained valid until the 1920s.

4.3.3 School geography in the Boer republics

4.3.3.1 Syllabus development

Geography was taught in the Orange Free State since 1852. According to a Government Notice it was expected of teachers to be able to teach geography. Only since 1863, however, after the first education legislation (of the Republic of the OFS), was geography recognised as one of the subjects that had to be taught. Initially the curriculum was very simple. The curriculum for Grey College for example consists of only:

- a discussion of the four world regions
- determining the degree of longitude and the degree of latitude of important cities.

The first full-fledged curriculum (in Dutch) was introduced in 1876 and was structured as follows (Behr and MacMillan, 1966)

Std 3 - Definitions, the use of maps, the geography of a district and the Republic (Orange Free State).
Std 4 - Africa, in particular South Africa
Std 5 - Two other World regions ("Wêreld-dele")
Std 6 - Political geography (Staatkundige aardrykskunde) of the world
Std 7 - As for Std 6

The syllabus differed from that being followed in the Cape and Natal at the time, in the sense that it required a more detailed

study of maps as well as world regions. Geography was, however rarely taught until the 1890s. A significant development at this time was the introduction into the teachers' certificate course. The curriculum remained valid until 1899 when war broke out and normal school conditions were non-existent. The curriculum was revised in 1904 with more emphasis on Britain and the British Empire. The syllabus was then also extended from standard 1 to 7.

The introduction of geography in Transvaal schools must be seen against the generally poor state of education during the early years. The subjects identified for instruction in 1852 were: reading, writing, arithmetic and "andere vakken van onderwys". Geography was, however, not one of the "other" subjects. It must also be noted that with the arrival of the Trekkers in the Transvaal, formal education was definitely not one of their priorities.

In 1859, in an extension to article 5 of the Van der Linden regulation of 1852, geography was mentioned for the first time as one of the subjects for primary school in the Zuid Afrikaanse Republiek. It was, however, limited to urban centres only. Civil war broke out in 1860 and had a rather negative impact on the development of education in general. There was, therefore, also no significant progress in geography.

Towards the end of 1874 the state made provision for different levels of schooling (Law No. 4 of 1874 implemented in 1876):

Ward schools ("wykskole"), district schools and secondary and higher education. The "beginselen der aardrijkskunde" could only be taught in the ward and district schools. Due to the annexation of Transvaal in 1877 by the English, the above mentioned law was never given a chance to be implemented.

After having reported to the new government on the backward state of education in 1879, Dr J V Lyle recommended the establishment of elementary schools. He suggested the following curriculum for geography:

Std 3 - Outlines of descriptive geography
Std 4 - Descriptive geography generally

Progress in education was again interrupted by war and in 1881 Transvaal became a Free Boer Republic. Du Toit became the new Superintendent of Education and the 1874 Education Law was re-instated and ratified as Law No. 1 of 1882. The Law distinguished between "Elementair ("lager onderwijs", "Middelbaar onderwijs" and "Hoger onderwijs". Geography could only be taught in the "Middelbaar" schools:

Std 4 - Definitions, the use of maps, geography of the Z A Republic.
Literature: Best: Grondbeginselen van de Geografie
Std 5 - General overview of the world, in particular South Africa.
Literature: Best : Grondbeginselen
Wilmot: Geography of South Africa
Std 6 - Mathematical, physical and political geography (staatkundige geografie) of the world, in particular South Africa.
Literature: Bruins: Driemaal den Aardbol om.

This was the first full-fledged curriculum and was to a large extent similar to the one developed by Dale in 1873. However,

much more emphasis was placed on the Transvaal and South Africa.

When Mansvelt took over as Superintendent of Education in 1891 he was set to continue building on the principles as laid down by Du Toit. He introduced a new Education Law, Law No. 8 of 1892, and it remained in force, without any substantial changes, until the abolishment of the Zuid Afrikaanse Republiek in 1900. A report on education in the Zuid Afrikaanse Republiek in 1891 clearly indicated that all was not well with the teaching of geography. It was described as "primitive and superficial" (in Levy, 1984, p. 69).

A curriculum was published in 1892 which was to a large extent a combination of the Lyle and Du Toit curricula:

Std 4 - Geography of South Africa, in particular the Z.A.R.
Std 5 - Principle characteristics of general geography, in particular the geography of South Africa.
Std 6 - Repetition of and extension to general geography, in particular the geography of Africa. The principles of Mathematical and Physical geography.

This curriculum was somewhat changed in 1895 when geography for Std 3 was also added:

Std 3 - Knowledge of a district (political and physical)
Std 4 - Geography of the Z.A.R. (political and physical)
Std 5 - Geography of S.A. in particular and Africa in general (political and physical)
Map drawing
Std 6 - Repetition of and extension to the geography of Africa (S.A. included). A review of the world, in particular Europe (political and physical)
Concepts in Mathematical Geography.

Striking features of the 1895 curriculum were the emphasis on fatherland geography and also its progressive nature. It started

with the geography of the child's own district and then went on to the province, the country and eventually Africa, Europe and the world.

4.3.3.2 **The transformation of geography teaching in the Boer republics**

In 1900 Transvaal became a crown colony and E B Sargant was appointed Director of Education in both the Boer Republics, the Orange Free State and Transvaal. English books were used and according to a report by Sargant the curricula of the Cape Colony were used in these provinces. A Provincial Code of Regulations for elementary schools proposed new standards for S.A. colonies in 1903 which resulted in the draft of new curricula: "In 1904 the new colonial administration stipulated geography as a compulsory subject for elementary and high schools, following current British practice" (Clark, 1989, p. 48).

For geography, the following curriculum was prescribed for standards 1 to 6:

Std 1 - To draw a simple map of the schoolroom and to read and reproduce simple map of school premises. Simple tales of great travellers and voyagers.

Std 2 - The larger geographical features of the neighbourhood, such as hills, water, main roads, etc.; with simple map reading. Conditions of travel in South Africa. Simple tales of travellers and voyagers.

Std 3 - The larger geographical features of the colony. More detailed and extended local geography, together with the simplest elements of physiography as regards the work of air and water on the earth's surface. General

knowledge of position on the globe of the great continents, oceans. More detailed account of travel in South Africa.

Std 4 - Elements of physical and Political geography of South Africa. Routes of travel between Europe and South Africa. Day and night. Seasons.

Std 5 - Elements of Physical and Political geography of Africa and Europe. Routes of travel between South Africa and British Colonies elsewhere. Latitude and longitude.

Std 6 - Elements of Physical and Political Geography of the remaining continents. Routes of travel between South Africa and other countries.

This curriculum differed markedly from its predecessors and was intended for schools in Transvaal, the Orange Free State and Natal. The syllabus was in line with the Cape syllabus which came into force in 1895 and the Natal 1901 syllabus, although individual topics appear in different years of study.

4.3.3.3 **Reaction: Christian National Education and geography**

Within the Christian National Education (CNE)-Movement (since 1900) geography was regarded as one of the compulsory subjects. The curriculum was as follows:

Std 3 - "Uitgaande van de plaats of het dorp waar de leerling woont, steeds den omtrek verbreedend, langsamerhand het geheele distrik".

As was the case during the days of the Republic geography started in Std 3 and showed similarities with geography for Std 3 in 1898. The starting point is, however, in accordance with the curriculum of the Provisional Code of 1903.

Std 4 - "De Transvaal - en Oranjerivier-kolonies in het bijsonder en een algemeen overzicht van Zuid-Afrika.

Std 5 - "Afrika en een algemeen overzicht van Europa"

Std 6 - "Algemeen overzicht van die geheele wêreld".

The Boers regained control of the Transvaal in 1907. A new curriculum for geography was drafted in 1909 which was in actual fact a mere modified version of the 1903 curriculum. The introduction to the new curriculum was, however, clearly based on white South African sentiments. The purpose of the curriculum had to be: "de ontwikkeling van Zuid-Afrikaanders, die tegelijk vaderlandslievend en verstandelik goed ontwikkeld zijn in de ruimte opvatting van deze uitdrukkingen" (in Botha, 1948, p. 62). The connection between geography and history was also emphasised and it was suggested that the geography of the Transvaal and South Africa should be dealt with in relation to South African History (Botha, 1948).

Despite the fact that little is known about the teaching of geography in the Boer Republics (Levy, 1984) the above discussion clearly reveals the extent to which the British - Boer conflict is manifested in the syllabi. It is reflected in the use of text books, the de-emphasis of physical geography, and the prominence of regional geography, with special emphasis on the Boer Republics and on South Africa in particular.

4.3.4 **The teaching of geography at black schools**

The Government Memorandum on Education of 1839 stipulated a system of public instruction with the white colonists (the Afrikaner in particular) in mind. Elementary education for those

who were not white was left to the various missionary societies: "It was not until the missionary movements began in earnest in the latter years of the eighteenth century that Native education, as distinct from that of European education, assumed any importance" (Levy, 1984, p. 38)

At most of the mission stations, apart from religious instruction, pupils were taught basic skills and a little handiwork. No set courses of instruction were followed, though at the Genadendal Mission Station for example, some form of geography was taught as far back as 1836 (Levy, 1984). By 1890 geography was taught at 90,6 percent (374) of mission schools in the Cape attended by "coloured" pupils (Knox, 1958). It was only during the early 1920s that a modified curriculum for "coloured" pupils was introduced while at the secondary level pupils followed the same syllabus as whites (Clark, 1989).

Before 1910 geography was taught to "Blacks" by the missionaries at mission schools in the Cape. In Natal it was not included in the curriculum for "Natives" in 1886. It was however a prescribed subject for "Native teachers" in the Transvaal in 1906 (Behr and MacMillan, 1966). Geography for Indians was included in the elementary curriclum when Indian education was placed under Natal provincial control in 1894 (Clark, 1989)

For many decades there was no unified approach to Black education. The missionaries came from several different countries such as Britain, France, Germany, Sweden, Scotland and

Finland, bringing with them different educational experiences. Needless to say, this must have had a profound influence on the kind of geography taught, if it was taught at all. Missionary schools also operated under very difficult circumstances, such as a shortage of proper accommodation, lack of funds, shortage of specialist teachers, a short period of school attendance, problems related to the language of instruction and a belief that a restricted curriculum, offering less range and depth, was more appropriate for the "needs" of particular groups (Levy, 1984; Clark, 1989).

4.4 **SUMMARY**

The history of school geography in South Africa, until the early twentieth century, should be seen within the context of both the history of the discipline internationally and the context of the dynamics of the local colonial society.

The kind of geography that was taught in South African schools was merely a reflection of the nature and scope of geography in Europe. Geography was introduced into the South African school system in 1839 when the country was under British rule. School geography in the Cape Province and Natal largely reflected, the then current British practice. According to Webster (1939) the curricula could be seen as an instrument of social control, i.e. to maintain the existing order and imposing, in the case of geography, the view of the natural and social worlds held by the

dominant groups. Seen in this light,the "Eurocentric" content of the early Cape and Natal syllabuses, with their focus on the British Empire, can be understood, ..." (Webster, 1939, p. 46)

In the geography curricula of the Boer Republics specific courses on Britain or the British Empire were completely rejected. Physical geography was de-emphasised while the focus was placed on descriptive regional geography and "fatherland" geography. English textbooks were also rejected and Dutch textbooks were used as far as it was possible. The differences of the curriculum content in the Boer Colonies could be seen as a manifestation of the deep rooted conflict which existed between the British and the Boer societies and which found its expression in the rejection of the anglicisation policies of Great Britain. In its efforts to establish hegemonic control over the Afrikaner, the British Authority totally neglected black education.

It is clear that geography, as a school subject could not proceed beyond the elementary school. Some appreciation of the status of geography as a school subject at the turn of the century, is, therefore, necessary in order to establish the basis from which geography began the road to academic respectability. The next chapter focuses on the perceived status of geography as a school subject and the need for the training of geography teachers.

5. THE STATUS OF GEOGRAPHY DURING THE LATE NINETEENTH AND EARLY TWENTIETH CENTURY

5.1 INTRODUCTION

The previous chapter focused on the development of school geography, within the context of the colonial society, until the early twentieth century. It highlighted the dominant role of the English in the development of education in South Africa generally, and in geographical education in particular. This role, as far as geography was concerned, became even more prominent after the Anglo-Boer War. The syllabi which were in use in the Cape Colony at that time served as the basis on which the syllabi of the new Colonies were developed, and in this way geography finally established itself as an "English subject".

The first chairs in geography were established during the third decade of this century. This was preceded by a period in which geography, as a school subject, was clearly occupying a peripheral position. It was regarded by some as a subject which deserved no place in the school curriculum beyond the elementary level. In contrast to such devastating sentiments there were, however, several teachers and academics who did a lot to prove the merits of geographical knowledge in education. The endeavour of these individuals was greatly enhanced by the positive

attitude of various bodies including, the Cape Education Department and the South African Teacher's Association (SATA).

Against the background of the relatively peripheral status of geography as a school subject within the overall educational system, it is necessary to consider the factors that contributed to its survival. Three interrelated aspects appear to have been of particular importance in this regard, (1) geography's role in legitimising colonial society, (2) the theoretical and methodological innovations which greatly enhanced the status of geography as a "science" within the South African context, and (3) the institutional support, which sustained the need for geographical education. However, before considering these issues some appreciation of the status of geography at the turn of the century is needed, in order to establish the basis from which geography started on the road to academic respectability. Two aspects will be dealt with: (1) the divergent views regarding the value of and need for geographical knowledge within the overall educational system, and (2) the extent to which provision was made for the training of geography teachers.

Education, and the need for geographical knowledge, provided the basis for the development of geography since 1839. At the turn of the century, geography was still primarily a subject for the elementary school. However, the post-Anglo-Boer War period was characterised by a dramatic change in the needs of the South African society, which resulted in demands for educational transformation and curriculum renewal. In order to locate

geography within the context of the "new" educational debate, it has been necessary to analyse various educational documents and publications, as well as the publications of various scientific and cultural associations. Publications which were found to contain useful information on geography include The Education Gazette, The Educational Times of South Africa, The Educational News, De Unie, and the South African Journal of Science. The Education Gazette, was the official publication of the Cape Education Department. Due to the problems experienced in the dissemination of information through the pages of the Government Gazette, it was decided to issue, since 1901, a separate periodical publication, The Education Gazette. It incorporated, in a collected form, information which appeared as Education Office Notices in the Government Gazette, or which formed the subject of printed circulars. A very important additional function of The Education Gazette, was to include reviews of all accessions of new educational books to the Education Office Library.

The Educational News, first published in 1890, was the official organ of the SATA, established in 1887. The SATA, through its conferences and journal, contributed immensely towards renewal and change in the educational system. The Educational News, is a valuable source of information as it provides the perspective of teachers on educational issues. The Educational News, was preceded by The Educational Times of South Africa, which was first published in 1886. It was the first publication of its sort and it took upon itself the task of promoting education in "this

part of the Majesty's Dominions" and to address matters concerning the local teaching profession. Because the educational system in general, and geography, in particular, was dominated by the English, there were no substantial inputs for geography from the side of the Afrikaner. An analysis of De Unie, first published in 1905, an organ of the Zuid Afrikaanse Onderwijs Unie, revealed a total lack of contributions which were likely to have influenced the nature and scope of geography as it developed in South Africa. It did, however, contain various general views on the need of geographical education. The status of geography within the academic community, and the extent to which it contributed to scientific research, could be established by working through the South African Journal of Science, organ of the South African Association for the Advancement of Science, established in 1902. The establishment of the South African Association for the Advancement of Science, was an important occasion for the development of scientific research in South Africa, and its annual congresses could be regarded as the most important forum for academic debate which existed during the early years of this century (Groenewald, 1984). The Educational News commented on its establishment in the following way: "We believe it would be difficult to overestimate its importance, either as a 'sign of the times', or as an impulse to scientific progress and to the appreciation of the value of scientific work to South Africa in particular" (The Educational News, 1903b, p. 53).

An analysis of articles on and references made to geography in

the above publications reveals that geography was not always highly regarded as a school subject. The next section endeavours to contrast the various opinions regarding geographical education in South Africa.

5.2 DIVERGENT VIEWS ON THE VALUE OF AND THE NEED FOR GEOGRAPHY: A RECIPE FOR STRUGGLE

After more than half a century as an official school subject in the Cape colony, at the turn of the century geography could still not claim a worthy place amongst those subjects taught beyond elementary school level. The dubious status of geography is reflected in the attitude of the council of the University of the Cape of Good Hope towards the end of the nineteenth century. At a meeting of the convocation of the University, on the 26th October 1895, a new set of regulations was proposed regarding the University school examinations (The Educational News, 1895a, p. 110). In the proposed regulations, both physical and commercial geography were included under the group of science subjects for the School Higher Examination. However, when the University announced the subjects for the school examinations for 1896, only physical geography was included, with Geikie's Elementary Lessons for Higher Examinations, as the suggested textbook.

Despite major advances in the discipline in Britain towards the end of the nineteenth century, the University authorities in South Africa could still not be convinced of the value of

geographical education beyond the elementary school. Geography had still to prove itself as a full-fledged science, as it was at best regarded as merely a "foundation" subject. This attitude is reflected in an article published in the first issue of the Educational Times of South Africa in October, 1886, in which Shaw (1886), realising the importance of geographical knowledge and the contribution it could make to the teaching of natural science, expressed the opinion that, "Geography teachers need be no great natural science students ...", implying that there was no need for specialised training in geography. Despite his high regard for Erdkunde (earth knowledge), as a school subject in Germany, Shaw (1886) maintained that geography should merely be the foundation upon which teachers should build special scientific knowledge. Geography was seen to be ideally suited for preparing scholars for specialised courses in geology, botany, and even chemistry.

An attitude such as the above, which did little for the image of geography, was echoed several years later by Reynolds (1904) in an article, "Natural Science in a Revised Curriculum". He stressed the importance of and the right of natural science to a place in the curriculum, but foresaw major problems for its incorporation into the curriculum as it already suffered from a congestion of subjects. Reynolds (1904) suggested that certain subjects would have to be eliminated, unless a more rational system and better methods were adopted, so that the knowledge obtained could be more instructive, the mental discipline more valuable, and so that less time would be required to teach the

subject. Geography, was one of the subjects which Reynolds (1904) had in mind. In reference to the importance of the educational process in securing both interest and educative results Reynolds quoted at length from an address given by Prof Ramsay at the Scottish Classical Association:

> "Take Geography. What subject can be more interesting to the young mind, more educative, if treated in a large and simple scientific way, with reference to the great determining features of our planet and its conditions? But what is commercial geography? I found an admirable specimen of it not long ago. I was shown an elaborate series of maps, the latest things out for teaching commercial geography. From one of these maps, a class was being instructed in all the railway lines, main and branch, which intersect the fens of Lincolnshire; while from another, a class was to learn that cakes are made at Banbury rock at Forfar, bicycles at Coventry, pins and bobbins at places otherwise unknown to fame. Could anything be more dull and senseless? It would be more useful, and quite as educative, to use Brandshaw's Railway Guide as a textbook; or to instruct children, by way of geography, where to find the sweetie-shops in their own locality" (Ramsay, in Reynolds, 1904, p. 161).

The kind of geography, as described by Ramsay, together with the problem of an overcrowded curriculum, seemed to have been enough reason for many teachers, and for the University Council for that matter, to be disgruntled with the presence of geography in the curriculum: "We understood that the inclusion of History and Geography as compulsory subjects in Std A and B is regarded with universal dissatisfaction by teachers in High Schools, and with the greatest surprise by those of them who had previously conferred with the Superintendent-General on the subject" (The Educational News, 1890, p. 64).

The fundamental value and need for geographical knowledge was

however not altogether dismissed. The fact that every child should have a knowledge of the world it inhabits, was generally accepted. The concern, therefore, was not so much with the value of geographical education per se, but rather with the level at which it ought to be taught, as well as the kind of geography that needed to be included in the curriculum. Shaw (1886), suggested that geography should be taught at the lower levels of education. He also felt, that as soon as the child knew the "general divisions of land and sea", it ought to be introduced to the intellectually, more stimulating, physical aspects of the subject, and in that way, the value of geography as a practical subject could be enhanced. The focus, according to Shaw (1886), should be placed on outdoor lessons, in which pupils could be taught such things as the different kinds of rocks, the effects of running water and the different kinds of waves raised in masses of water. Excursions should also be organised during which specimens could be collected, in order to facilitate an understanding of the South African environment.

An editorial in The Educational Times of South Africa expressed a totally different view. It, first of all suggested to the Council of the University, that geography be included in the Matriculation and higher and elementary examinations as an obligatory subject. It further stated that, "We are perfectly aware that there is an objection to Geography being placed on the list of Matriculation subjects, but its introduction both in the Higher and the Matriculation examinations would certainly be an advantage, as at present no Political Geography is taught for

examination" (The Educational Times, 1886, p. 2). The request for political geography in the curriculum, was based on a need for more local geography, especially aspects of the commercial activities within the colony. This was seen to be of fundamental importance to any scheme of a general and sound education. The extent to which this deviated from the perception Ramsay had of geography is not clear. The fact of the matter is that British political and commercial geography had been given new content at about that time, in particular in relation to Mackinder's article: "On the Scope and Method of Geography" (1887), and the publication of Chisholm's "Handbook of Commercial Geography" (1889).

Comments, and reviews of articles in overseas journals, published in The Educational Times, reflected its continued support for more and better geography in South Africa. It also underlined the need for competent geography teachers. The March 1887 edition of The Educational Times, for example, reported on the positive developments in geography teaching in Europe and expressed the hope that geography would soon be able to take its rightful place in university programmes in South Africa: "There has been quite a revival of late of the subject ... and its importance. We trust that the European wave of agitation will radiate hither. Some years ago geography was in the university programme, but it has entirely vanished from representation. And that in a country in a continent as yet only partially explored" (The Educational Times, 1887a, p. 19).

Despite the wavering attitude towards geography, the South African Association for the Advancement of Science, deemed it fit to recognise geography as a science in 1903. Geography was incorporated in Section B, together with anthropology and ethnology, bacteriology, botany, geology and mineralogy, and zoology. The extent to which the recognition of geography as a science by the South African Association for the Advancement of Science enhanced its status as a subject, is not very clear. There was, however, since the middle of the first decade, a substantial improvement in the image of geography, and the need for geography in the education system was realised more widely. Chubb, a former president of the South African Teachers' Association, saw a definitive place for geography in the curriculum: "... it should always be remembered that it is a science, and the mere hoarding up of lists of names should be distinctly discouraged. It is meant to make its students think, which is about the last thing required in an ordinary geography lesson" (Chubb, 1905, p. 148).

Although the Afrikaner realised the need and importance of geographical knowledge, it clearly did not have priority status for him. At the conferences of the Zuid Afrikaanse Onderwijs Unie, there was the usual odd comment on the neglect of geography teaching, but without any substantial suggestion as to how to improve it. This negligence was brought to mind in a very forceful way at the fifth congress of the Zuid Afrikaanse Onderwijs Unie, in 1910. The president registered his dissatisfaction with the state of affairs in the following way:

"En zo gebeurt het, dat de grootste onkunde aan de dag wordt gelegd aangaande zulke nuttige onderwerpen als aardrijkskunde, ... dat het met recht een nationaal schandaal kan worden genoemd" (De Unie, 1910, p. 193). This strong conviction should, however be seen against the background of a generally grave concern among the Afrikaner regarding the quality of their education: "Er wordt heel wat geklaagd oor ons lager onderwijs: in de regal kommt 't daarop neer, dat het onderwijs niet deeglik genoeg is, als 'n jongen deur z'n zesde standaard is, kan hij noch Engels noch Hollands behoorlik schrijven, en hij weet heel weinig van Geschiedenis en Aardrijkskunde. Kortom, hij is nergens toe in staat" (De Unie, 1906a, p. 21).

The debates in De Unie, however, reflected a much greater concern with mother-tongue education and religious instruction, fatherland history and issues surrounding the "volk". However, De Unie, for example, supported the Synod of the Dutch Reformed Church in 1906, when it requested the Council of the University to include physical geography in its proposed final examination (an equivalent to the matriculation examination)[1].

What had crystallised thus far, is the fact that the place of geography in the curriculum could not be taken for granted. Strong views existed against the incorporation of geography as a subject for the University's higher examinations, with, of

[1]The extent to which this request was to be in support of a teleological world view among the Afrikaner, needs to be further investigated. To establish such a link was in any event in conflict with the dominant English conception of geography.

course, severe implications for its institutionalisation as an academic discipline. On the other hand, however, geography was seen to be an important and indispensable component of the curriculum. The contrasting views regarding the value and need for geographical education, presented those intimately involved in promoting geographical education, with the main ingredients for a severe struggle - a struggle to convince the critics of the inherent value of geography as a school subject and as a science and, in doing so, to secure geography's place in the curriculum for the University's higher examinations. It should be understood, however, that the status of geography in South Africa was merely a reflection of the status of the subject in Britain. While The Geographical Teacher (1901/2), announced that hardly a school existed in which the subject was not taught, Wilkinson wrote that "All who desire to further the interests of true geographical education keenly regret the present position of the subject in our schools. Educationalists deem it of little value; teachers handle it in a dull mnemonic fashion; whilst parents value it only for its supposed practical importance" (Wilkinson, 1901/2, p. 39). Wilkinson (1901/2) suggested that the topographical nature of geography was probably at least partly responsible for its less than favourable image. He found that at many schools more than 70% of examination questions consisted of "memory" (topographical) questions, and was of the opinion that "The examiner who fills his paper with memory questions debases the subject, encourages cram and discourages thought" (Wilkinson, 1901/2. pp. 40-1). On the other hand rational questions would call out the pupil's intelligence and

reasoning powers, treat the subject worthily, encourage thought and discourage cram. A more rationally taught geography was severely hampered by the comparatively few teachers with a special training in geography. Most of the geography teachers were compelled to teach geography because of its inclusion in the curriculum: "They have had to teach themselves before they taught their pupils" (The Geographical Teacher, 1901/2, p. 38). In a joint meeting of the Geography and Education Section of the British Association in 1903, Mackinder identified at least the essentials for the progress of geography teaching: (1) University schools of geography should be encouraged, where geographers could be made, many of whom would become secondary school teachers; (2) Secondary schools should be persuaded to place geography teaching of the whole school in the hands of one geographically trained master.

With School geography in a relatively peripheral position at the turn of the century, here and in Britain, the question which arises now, concerns the structures that existed for geography to develop inside South Africa. The next section briefly reviews the extent to which students could be trained as geography teachers during the late nineteenth and early twentieth century.

5.3 THE TRAINING OF GEOGRAPHY TEACHERS

5.3.1 A brief review of the origin and early development of teacher training in South Africa

The training of teachers in South Africa is of very recent origin, although the Afrikaner endeavoured to establish training facilities for teachers as early as the middle of the eighteenth century. Their plans were never implemented due mainly to the British occupation of the country at times when these plans were about to materialise. A plan to improve education, developed by Ds Fleck in 1791, had, for example, to be abandoned in 1795. During the time of British occupation (1795-1803) little progress was made in training of teachers. When the country came under Dutch Management again, commissioner J A de Mist drafted his School Ordinance (1804) for the Cape of Good Hope, which explicitly provided for the training of teachers in seminaries (Bot, 1919). Unfortunately these plans did not materialised as the country became a British colony on January 10, 1806. All contact with Holland ceased and British soldiers, among others, were given the responsibility for education. In 1813 the Bybel-en Schoolkommissie (previously the Kommissie van Schoolarchen) revitalised the idea of a seminary. Sir John Cradock responded positively but the idea also came to nothing. When Cradock left in 1814, his successor, Lord Charles Somerset, showed little interest (Bot, 1919). During the period 1814 to 1839 nothing was done regarding the training of South African teachers. Teachers were rather imported from Scotland.

In 1842 a Normal School was opened in Cape Town, three years after John Bell, Colonial Secretary, first mentioned the idea. The school consisted of two sections: a primary school (for children between 6 and 14 years), and a training department: "The main object of this department is to afford to the servants opportunities of witnessing, under the most favourable circumstances, the development of the principles adduced in the lecture room, and of practical training in the art of teaching and the whole economy of a school" (in Bot, 1919, p. 249). Due to low salaries and the fact that teachers for senior posts were continuously imported, there was a lack of interest in the local teaching profession and the school had to close down in 1860.

However, the establishment of the Normal School could be regarded as the origin of the local pupil-teacher system, which took on greater proportions after 1858, when the introduction was formally announced by the government (Behr and MacMillan, 1971). The duration of the course varied between three and five years. The system required pupil-teachers, apart from following the ordinary curriculum, to spend part of their time observing the teaching of their teachers, to whom they were apprenticed. It was also required of pupil-teachers to attend classes after school, during which they were introduced to the subject matter of the lessons still to be taught and during which the students were also prepared for the Elementary Teachers' Certificate (the later Third Class or T3 Certificate). During the limited amount of teaching pupil-teachers undertook, they were encouraged to

imitate their teachers slavishly (Behr and MacMillan, 1971). Pupil-teachers had to commence their apprenticeship at the age of thirteen or in Standard 4. The duration of the pupil-teacher course was changed to three years in 1894, with Std VI the year of entrance. In 1901 the year of commencement was raised to Standard VII.

To supplement the pupil-teacher system, the government established a normal school in Cape Town in 1878 under the rectorship of J R Whitton. The training of teachers was gradually upgraded and further certificates introduced, namely, the Middle Class Certificate (the later Second Class or T2 Certificate) and the First Class Teachers' Certificate (the later T1 Certificate). Pupils preparing for the Middle Class Certificate did not qualify as teachers, but attended the Normal School to prepare for the matriculation examination (Behr and MacMillan, 1971). They were at that time examined in the following subjects: English, arithmetic, geography, writing, school management, Latin, science, and drawing. Dutch, French, and German were optional subjects. Teachers in possession of the Middle Class Certificate could take charge of second class schools, or served as assistants in first class schools. The First Class Certificate was introduced to encourage the better educated teachers, especially graduates, to improve their professional skills. From the end of the nineteenth century, special certificates were also issued to students who attended vacation courses. These courses were meant for both uncertified and qualified teachers. Since 1908, vacation courses were

limited to only a few special subjects, such as music, needlework, gymnastics, woodwork and later, nature study (and geography).

The training of teachers in the Transvaal, the Orange River Colony and Natal was only seriously considered after the Anglo-Boer War. In Transvaal and the Orange Free State, under the directorship of Sargant, Teachers' Certificates similar to those in the Cape were issued, but they were of a higher standard. The Middle Class Certificate, for example, was meant for the normal college student who had reached a matriculation standard and who had for a year concentrated his attention on the practice of general teaching.

In Natal, the pupil-teacher system never really got off the ground, which resulted in a large scale employment of teachers from England and Scotland. Since 1904, women teachers were trained for the Middle Class Certificate in Pietermaritzburg and Durban. This was discontinued in 1908 with the establishment of the Natal Training College at Pietermaritzburg in 1909.

This brief historical overview of teacher training in South Africa highlights the recency of teacher training as well as the standard of the various certificates that were issued. The training of geography teachers, within this general context, will be discussed in the following section.

5.3.2 The pupil-teacher system and the training of geography teachers

Considering the status of geography during the early years of the twentieth century,(i.e. that it was only taught at the elementary school level), and the opportunities that existed for the training of teachers, it is clear that geography teachers could at best qualify with a Third Class Certificate. It was also mainly in the Cape Colony that the best opportunity, via the pupil-teacher system, existed for the training of geography teachers.

Although geography was officially recognised as a subject for the Standard VI curriculum in 1895, the publication of a set of three pupil-teacher question papers in The Educational News, towards the end of the same year, indicated that geography was already unofficially taught in Standard VI and beyond. In all three papers geography was combined with history in single three-hour papers. Remarks on the geography section of the first year include: "The geography questions were general and well chosen, and aimed at working on the intelligence of candidates" (The Educational News, 1895b, p. 194). The third year paper drew the following remark: "Almost every candidate should score in this paper, as it was entirely book work and did not require brains" (The Educational News, 1895b, p. 195). The papers include mainly map work, topographical descriptions, questions of the "what-do-we-get-where" variety and questions on aspects of physical

geography. Since the beginning of this century separate examinations were written for history and geography. The examiners' comments on the 1901 examinations were not very positive. Comments include the following:

First year: "The questions demanding intelligence were much less satisfactorily answered ... The general impression given by the papers is that the subject is 'crammed' instead of being intelligently taught and graphically illustrated" (The Education Gazette 1902, p.188).

Second year: "A few sets show that the subject had received some attention, but in many cases it cannot have been studied at all (as one candidate confesses), or it must have been studied without the help of maps ... Physical Geography was poorly done (The Education Gazette 1902, p.188-9).

Third year: "Map-drawing is still as a rule rather disappointing ... The questions on products for example, gave occasion for much haphazard and comprehensive guessing" (The Education Gazette 1902, p.189).

In 1904 The Education Gazette, published new requirements for geography (The Education Gazette, 1904a). The change in the syllabus was deemed necessary on account of the higher standard that was demanded of pupil teachers. The new syllabus was structured as follows (APPENDIX 2):

First year: Africa, with South Africa in greater detail.
Second year: The British Empire
Third year: The World

The Department of Education also suggested appropriate books and

atlases for both student and teacher use and for school libraries. It was also stressed that, in order to cultivate an intelligent interest in geography, pupil-teachers had to be motivated to use the suggested books. The following textbooks were suggested:

First Year:
Black's School Geography (the volume on Africa)
Longman's School Geography for South Africa

Second Year:
Black's School Geography (The British Empire)
Meiklejohn's The British Empire
Blackie's Survey of the British Empire

Third Year:
Black's School Geography (Elementary Geography of the World)
Black's School Geography (the World)
Meikeljohn's School Geography
Olivier and Boyd's A New Geography of the World
McDougall's Outlines of Geography

Atlas: Advanced Atlas for South Africa (T. Nelson and Sons)

By the end of the first decade of this century there was still no real change in the quality of the teaching of geography in the teachers' course. According to the annual report by Inspector Anderson, "Geography ... is still apt to be treated too much as a matter of memory, an enumeration of facts and places. Its advantages as a means of training the reasoning powers are lost. ... fundamental ideas were often vaguely apprehended by the students themselves; it was rarely found that

a teacher could give a clear account of the system of colouring in a physical map" (The Education Gazette, 1910, p. 172).

Although geography was not an official subject for the Second-Class Teachers' Certificate, according to Inspector Anderson's report, it seems that geography was taught to these students. This indicated the existing need for more and better qualified geography teachers and the willingness of the authorities to even bypass school regulations: "The Second-Class Certificate students, many of whom have not renewed acquaintance with Geography since leaving school, were very little if at all superior to the pupil-teachers. It is strongly felt that all the students should be introduced before the end of their course of training to a systematic treatment of the main principles of modern geographical science" (The Education Gazette, 1910, p. 172).

The quality of "pupil-teacher geography", its nature and scope, was dramatically upgraded with the introduction of the Third Year Senior Pupil-teacher's examination, in 1912. This afforded the authorities with the opportunity to introduce "the principles of modern geographical science", in line with the "new" geography in Britain (for an analysis of the syllabus, see Chapter 6).

In the light of examination reports, the training of geography teachers proved to be no great success. However, more and better qualified teachers remained a pressing need. This is reflected

in Inspector Anderson's report of 1910, as well as the Cape Education Department's decision to incorporate the "new" geography in the curriculum for the Third Year Senior Pupil-Teacher's course.

5.4 **SUMMARY**

Despite the divergent views regarding geography, and the less than ideal circumstances which existed for the training of geography teachers, geography remained fundamentally important to general education in the elementary school. What sustained the need for geography and its further development in South Africa? This question will be the focus of the next chapter.

6. THE MAKING OF A DISCIPLINE: THE MANIPULATION OF GEOGRAPHY TO SERVE THE NEEDS OF EMPIRE

6.1 INTRODUCTION

Reference has already been made to the anglicisation of society at the Cape, and in South Africa in general. Education played a major role in supporting this process, and geography, in particular, was seen to have had a legitimating function in this regard. Geography was highly regarded for its role in justifying Britain's territorial actions, both within South Africa and globally. Its role in frontier expansion, "to conquer and civilise the wilderness", was also clearly realised. In 1887 The Educational Times, expressed its astonishment at the vanishing of geography from university programmes, realising the contribution it could make to exploration in Africa (The Educational Times, 1887a).

The need for geographical education in South Africa ought to be seen within the context of the development of the discipline internationally. It has been shown (Harvey, 1984; Hudson, 1985; Capel, 1981) that geographers, and geography organisations did much to encourage the development of overseas empires, especially during the last quarter of the previous century, after the introduction of the so-called "new" geography. The study and the

teaching of the new geography was, according to Hudson (1985), vigorously promoted at that time.

This chapter addresses the role of geography in empire education. It also outline the response of those intimately involved with promoting geographical education in view of the demand for more science education during the early years of this century.

6.2 GEOGRAPHY AND THE IDEOLOGY OF EMPIRE

Prior to the establishment of the Oxford School of Geography in 1899, Sir Thomas Holdich at a meeting of the Royal Geographical Society gave some striking illustrations of the uses of practical geography in frontier operations and the delimitations of boundaries. In commenting on Holdich's speech, The Times wrote:

> "The serious mistakes made and the risks of war incurred by geographical ignorance have often been referred to; with the establishment of [the Oxford School of Geography] there will be no excuse for such ignorance among those who may have the conduct of the Empire's affairs. Men who think of entering on a political or military career, or who intend in one capacity or another to take service in some part of the Empire beyond the seas or who look forward to having dealings with foreign countries, might find it greatly to their advantage to avail themselves of the opportunities which, it is hoped, will shortly be presented at Oxford" (The Times, 1899).

Eight years later, in a confidential document, the representatives of the University on the committee for the instruction in geography (C H Firth, H A Miers, J C Myers, A J

Herbertson) considered requesting the council of the university to ask The Civil Service Commission to make geography one of the optional subjects for the Class I examination, the reason being that "the practical value of geography in certain departments in the Civil Service is obvious. For the Foreign Office, and no less for the Colonial Office, it is essential. By excluding this subject from the examination for the highest branches of the Civil Service, and from the courses of studies which prepare men for them, we shall run the risk of limiting our men's chances of qualifying for the higher posts, or of fulfilling the duties of them adequately" (Oxford University, 1907).

In the colonies, however, education in general and geographical education in particular, had to respond to imperialism in a very specific way. The context for geography's contribution to "empire education", was already clearly outlined by Lt -Colonel H. Elsdale of Natal, in an article published in The Educational News of March 1895. In the article, "Higher Education: Its Present Deficiencies and Future Improvement", Elsdale (1895) expressed his concern about the contents of the education provided in the colonies and proposed a syllabus which could effectively promote empire sentiments. He justified his views on an empire oriented education in the following way.

> "The British Empire is tending steadily to become, and is certain to be in future, an aggregation or union of self-governing communities, and among these the Cape Colony and Natal have taken this place by the introduction of Responsible Government. It is of the very first importance, therefore, that their Minister and legislators should duly weigh the responsibilities of the position betimes, and take all such measures as

> will tend to educate the constituencies and the public generally and enable them to take their proper place and efficiently perform their duties, whether as free and enlightened electors or legislators in a local self-governing community, or as citizens of a great world-wide empire" (Elsdale, 1895, p. 236).

This according to Elsdale could best be catered for by an effective higher education which would not "turn out students learned, it may be, in Latin and Greek and in all the 'ologies, but ignorant of the fundamental duties of a citizen, and knowing little or nothing of the great questions, whether political, commercial, social, or economical, on which the fortunes of the whole empire, for weal or woe, must inevitably depend in future" (Elsdale, 1895, p. 236). While complimenting the London School Board for its efforts in promoting empire education he suggested that all colonies should follow this example and so, "... widen the horizon of their children, and train them adequately for their future duties ... This, while England is careful to train her children to a better knowledge of each distant colony and its needs, the colonies should apply themselves to learn more of the position and requirements of England, and of the great question which must largely determine her future, and vitally affect the fortunes of all her colonies in the coming century" (Elsdale, 1895, p. 236).

Elsdale proposed a rough curriculum which could be used in the higher schools during ordinary working hours or by special courses of evening lectures. The curriculum included the following main themes (APPENDIX 3.A):

A - The position of the South African Colonies under Responsible Government
- The more general position and interests of the Cape Colony and Natal
- The British power elsewhere in Africa.

B - The position of England in relation to free trade
- The grave responsibilities of England
- The past position of England at the centre of gravity
- The position of England in relation to the war between Japan and China

C - The present position of the continent of Europe
- The position of various countries in Western Europe
- The position of the United States

D - The great question of the federation of the Empire

Addressing such issues, according to Elsdale, would have been of vital importance to the future of the British empire, and could powerfully influence the future of the whole human race. The subjects Elsdale regarded to be the most suitable to teach his syllabus were geography and history. Regarding the role of geography, he noted: "Much can be done by an intelligent teaching of geography. For it will be noted that a great deal of the ground above is covered by, and comes properly within the province of an enlightened geography lesson. Thereby the dry bones of geography will be clothed with a much more attractive skin, and the geography lesson will become far more interesting to the boys, and will be much better assimilated and remembered" (Elsdale, 1895, p. 238). Realising the need for Latin, Greek, French, Mathematics or Science, Elsdale felt that it was "... of more importance that our higher schools, and all our schools, should set themselves to train up a race of well-informed, patriotic, and enlightened citizens, who know something of the

history, the present position, responsibilities, and requirements of the empire, who are prepared to do their part worthily and well in carrying it on in the future ..." (Elsdale, 1895, p. 239). The fact that this plea came from a Lt. Colonel is not insignificant. The involvement of military men in geographical matters was a commonplace British phenomenon. Officers of the armed forces, acting through the Royal Geographical Society, were amongst the most energetic champions of advanced geographical education (Hudson, 1985).

After the war, the inculcation in school children of a single-minded loyalty to British rule, emerged as a very high educational priority. The promotion of this, was seen as the first object of all education, especially in the new territories. It was regarded as the duty of the state to devote its attention first and foremost to the fashioning of a loyal and contented population (The Educational News, 1902a). The anglicisation of society was a very high priority as far as the British authorities were concerned, and teachers were "imported" from all over the British Empire, "... 'to win over the young generation of Dutch Africanders to English ways of thought and speech', and to get them to understand 'the greatness of the English Imperial Idea'" (Behr and MacMillan, 1971, p. 269). Geography responded positively to this need and many lessons on the British Empire were included, not only in the school geography syllabi, but we have also seen that a full year was set aside for empire geography in the pupil-teachers' course. Literature for use in schools was regularly suggested in

The Education Gazette and in The Educational News, for example:

> The Royal Wall Atlas for South African Schools (the Concluding Atlas, for Std VII, dealt with the British Empire).
> For junior classes : Parkin's Round the Empire
> For senior classes : Nelson's Royal Osborne Geography Reader (Book VI).

Of particular significance was the introduction of the Duke and Duchess Prize for geography. The Duke and Duchess Prize originated at the beginning of this century after the visit of King George V and his wife. After all the expenses had been met, in connection with the children's celebrations on the occasion of the Royal Visit, about 800 pounds was left. This money was used as an endowment fund for the purchase of prizes for schools of Cape Town and Sea Point, in existence at the time of the visit. The prizes were to be in commemoration of the Royal visit. The trustees of the fund decided that the prizes be given for proficiency in an examination on the "Geography of the Empire". Eligible pupils would have been those in Std VII, or where a Std VII class did not exist, Std VI. The paper for the latter class consisted of a few simple questions on the geography of the empire, combined with questions on the Cape Colony. Due to the existence of the Victoria League Prizes it was decided to combine the two schemes (The Education Gazette, 1903). Two papers were set, one for the Senior Examination (identical to that for the Victoria League Prizes for Std VII) and a Junior Examination (Std VI) (APPENDIX 3.B). The following schools (and number of children) were the first to partake:

Rondebosch Girls High School	24
Sea Point Boys High School	9
St Agnes' School (Woodstock)	2
South African College School	1
Franschhoek High School	9
Riebeeck West Public School	14
Uniondale Public School	7
Stellenbosch Boys' High School	1
Total:	67

The quality of the work done by the students and the number of students enroled for the course varied substantially over the years. In 1909 the examiner felt that, "... the quality of the pupil's answers was much inferior; in fact it was difficult to believe that many of the candidates were serious competitors for the Duke and Duchess Prizes" (The Educational News, 1909a, p. 545). After 1911 the examinations for the Duke and Duchess Prizes have been treated as mere competitions without any certificates being issued.

A major goal for geography was, therefore, to foster among the public, and the Afrikaner in particular, an acceptance of their status as part of the British Empire. The representation of the interests of the English community as universal, constituted a significant component of geographical education. This was an idea also nurtured by G R Parkin. Reporting on his address to the Annual Meeting of the Geographical Association, The Geographical Teacher writes:

> "On his travels, after a long day in an express train through a new and not very populous country, he often thought, not so much of the potential greatness of this new land, but of the astonishing little United

> Kingdom which managed to support so many millions. For these millions geography was surely important. In the lowest common school and in the highest they should learn about the great Empire and its relations to the rest of the world" (The Geographical Teacher, 1905/6, p. 144).

Geography, at this very early stage in its development in South Africa, abstracted itself from society. It, thereby, failed to account for the social relations within the broader society, and by doing so, contributed to the obscuring of systems of domination which existed. The theorem, that, "... the ideas of the ruling class are in every epoch the ruling ideas" (Marx and Engels, 1970, P. 64), is very appropriate in this regard. A concern with sectional interests introduced into geography a clear ideological component. This was enhanced by the distortion of communication i.e. "Facts" were presented to suit the interests of the English. However, this educational strategy was challenged on various occasions from within the Afrikaner community. In an anonymous article, very critical of the educational system, published in De Unie in 1906, the writer had the following to say about the nature of geography: "Of wellicht in standaard B, waar de kinders van de aardrijkskunde o.a. leren moeten, dat al wat op de grote landkaart rood geverfd is tot het Britse Rijk behoort, terwijl al het andere behandeld word alsof het onbekende gewesten zijn door woeste barbaren bewoond" (De Unie, 1906a, p. 21).

Some members of the Afrikaner community tended to accept the status quo. In an anonymous letter, published in De Unie, the writer was of the opinion that, "...We zijn hier sinds 't begin

van de vorige eeu 'n Britse kolonie. En je weet toch wel, dat de ouderwetse opvatting altijd geweest is: de kinderen van de kolonies moete 't land van hun koning beschouen als hun vaderland!" (De Unie, 1906b, p. 49). Others were, however, of a different opinion: "Als britse onderdanen zijn we loyaal als afstammelingen van Geus en Hugenoot blijven we onszelf" (De Unie, 1907, p. 229).

Information provided in text books was a major concern for the Afrikaner. In most cases the English were regarded in a very positive light, while they felt that the Afrikaners were very negatively portrayed. In a letter to De Unie, under the heading of, "Zo leren onze jongelieden aardrijkskunde en geschiedenis", the writer quoted at length the following passage from Gill's, "Student's Geography" (translated):

> "Toen de Hollandse Boeren de Kaapkolonie verlieten om 'het Beloofde Land te soeken, zoals de Joden in de oude tijd, staken niet minder dan 10,000 trekker de Oranje Rivier over. Vreselike konflikten grepen plaats tussen hen en de krachtige Matabelen en Basoeto's. Verschrikkelike schlachtingen ("massacres") waren gehouden; gehele kafferdorpen werden uitgeroeid; en elke lijn van voortgang was een lijn van bloed. Over de Oranje Rivier stichten de trekker een nieuwe staat, doch de Britten volgden de vluchtelingen, en in 1848 verklaarden zij de suvereiniteit van de koningin van Engeland over dit land. De Boeren geholpen door de Grikwa's, boden weerstand, doch waren te zwak en velen onderwierpen zich tijdelik.
>
> De "Oranje Rivier Kolonie" werd gesticht in 1854 als "Oranje Vrijstaat" en is sedert in welvaart vooruitgegaan. (Dus de "Vrijstaat" was een kolonie!!). Echter waren een aantal niet tevreden met de britse toestanden, n.l. de afschaffing der slavernij en de erkenning der kaffers als vrijen. Zij trokken dus over de Vaal, waar ze de Transvaalse Republiek stichten, en dese werd in 1852 door het britse

> Goevernement erkend. In 1877 richtten de Boeren een gruwelike slachting (!) aan onder de kaffers, en dit was de reden, dat de Britten het gebied dat jaar annexeerden. Doch weer willen de Boeren vrij zijn en hesen de vlag der onafhankelikheid te Heidelberg in 1880. Zij wonnen de slag van de Majoeba, waarna vrede gemaakt werd in 1881, waarbij de Boeren de suvereiniteit van Groot-Brittanje in buitelandse betrekkingen erkenden. Ten gevolge evenwel van een poging in 1899 om de Britse suprematie af te schudden werd een lange strijd gevoerd tussen de twee Boererepublieken en Brittanje waarin de twee landen hun onafhankelikheid verloren" (De Unie, 1908, p. 385).

The writer of the letter commented on the excerpt in the following way:

> "Dus:
>
> 1. De slechte Boeren waren ontevreden, omdat de goede Britten de slaven vrijmaakten ("hoe" word niet gezegd).
> 2. De slechte Boeren slachten goede Kaffers.
> 3. De Transvaal Republiek werd in 1877 geannexeerd, omdat de Boeren weer zo aan 't slachten waren.
> 4. De oolog was dus een gerechte straf voor ongehoorzame onderdanen!
>
> Hemel geve, dat we spoedig een Afrikaner als Hoofd van ons onderwijs krijgen. Het tegenwoordige Onderwijsdepartement doet geen moeite om leugenboeken uit de school te houden" (De Unie, 1908, p. 386).

Despite the severe criticism from the Afrikaner, school geography remained committed to the ideology of empire well into the second decade (see Chapter 7). In the meantime, however, other needs had also developed within the broader society, which demanded a philosophical and methodological re-orientation as far as geography was concerned.

6.3 THE COLONISATION OF GEOGRAPHICAL THOUGHT

6.3.1 Change within the educational environment inside South Africa

With the advent of the twentieth century, various other demands were placed on the agenda of the educational system in South Africa. It was realised that in order to facilitate industrial and commercial development in a very competitive world, the development of science ought to be of paramount importance. This led to a greater recognition of the value of training the powers of observation and of thinking, rather than the amount of knowledge conveyed in a given period in school.

Many voices were raised in favour of renewal in and transformation of the educational system. The dominant position of the classics was one of the major issues that was addressed, and sentiments in favour of a more liberal education were explicitly expressed. A point was reached where it was realised that Victorian subjects would have to be replaced by science and other modern subjects in order to prepare the youth for the demands of the modern world. It was argued that the reasons for Latin in the curriculum, for example, had ceased to exist altogether, or had lost in their relative importance, "... the introduction of fresh subjects of study, literary and scientific, presses increasingly on our attention and raises doubts as to whether the classics shall hold the dominant position in our educational system that they have hitherto done"

(The Educational News, 1903a, p. 41).

The first meeting of the South African Association for the Advancement of Science, in 1903, had brought the importance of the study of science prominently before the minds of academics, teachers, and the public. A major catalyst in this regard, was Dr Muir's presidential address at the above meeting, entitled, "Education and Science". According to Muir (1903), the history of education in England revealed three main streams of tendency, namely nationalisation, organisation and modernisation, i.e. Education became a function of the state, it tended to be better organised, and the attitudes towards subjects altered significantly. A change in attitude was experienced regarding the position of modern languages and science in secondary schools, the development of technical education, and the widening of the curriculum in universities.

In an editorial in The Educational News, which reflected on the first meeting of the South African Association for the Advancement of Science, support was expressed for more and better science education: "All will admit the right of science to a place in the curriculum - the only question being what place and whether any radical changes are necessary to give it its proper place ... there can be little doubt that radical changes will be necessary ... the congestion of subjects in our present curriculum will prevent science from receiving such recognition as would be necessary to give it its proper educative value" (The Educational News, 1903b, p. 53). All of

this had severe implications for geography, in view of the fact that people were around who would have seen geography removed from the curriculum, in order to make place for "proper" science subjects (see section 5.2).

By the middle of the first decade, the importance of science education was readily accepted. However, various new foci started to develop, namely, a realisation that local needs ought to be addressed to a far greater extent, that education should be more practical, and, above all, that mental training should form part of the foundation of a sound education. In a lecture to the Closer University Society, Marais (1908), stressed the need for a South African educational system in which the young could be trained in such a way that they would be thoroughly equipped for their life-work in Africa. They also had to be provided with the necessary skills to develop the resources within South Africa. He pleaded for more technical training in the school courses, particularly for those classes of children whose future lives would undoubtedly be spent on the soil. In a significant response to Marais's lecture, Kipps (1909), editor of The Educational News, was of the opinion that the principles regarding practical and manual work, were already recognised, and that much had been done within the confines of several subjects, for example, nature study, the natural sciences and geography. He also emphasised the growing conviction among educators that text books could no longer be regarded as the sole materials required for mental development.

The importance of mental training was highlighted by Sutherland in his presidential address to a SATA conference in 1909. He expressed the following opinion: "... the best education they can receive in schools is one that train them to observe accurately, to reason soundly, and to act promptly and to good purpose - in short, an education that will train them so that when the times come for them to leave school they shall do so with a feeling that they are endowed with the means of adapting themselves to any situation in life that may lie open to them" (Sutherland, 1909, p. 89).

It was, according to Sutherland, the duty of the educator to see to it that the various faculties of the mind received their due share of attention. In order to achieve this goal, he suggested a model curriculum which should include at least one language subject, one of art, and one subject of science. Concerning language, art and science, he felt very confident about Latin, geometry, and drawing. The choice of a science subject was, however, not so easy. Subjects, like botany, chemistry, or geology were, according to Sutherland (1909), too specialised, as any one such subject will exclude all others. The solution would have been the discovery of a subject that treated a variety of branches in a general way. Sutherland (1909), couldn't find a suitable subject in the list for the matriculation syllabus of the University, and suggested a subject in the science syllabus of the South Kensington College, and of which he had personal experience, namely , physiography: "It does not take up any branch in great detail, but it gives a

sound fundamental instruction in a great variety of branches, such as heat, sound, light, magnetism, electricity, astronomy, chemistry, geology, and physical geography, generally. I can testify from experience to the value of physiography as a solid groundwork in science instruction" (Sutherland, 1909, p. 90).

The concern with mental, manual, and practically oriented education was in response to the South African realities, but it was rooted in the European experience. Kipps (1909) quoted Sir Philip Magnus, who was president of the educational section of the British Association: "We seemed to have erred in neglecting to utilise practical pursuits as the basis for education, and in failing to build upon them and to evolve from them the mental discipline and knowledge which would prove valuable to the child in any subsequent occupation, or as a basis for future attainment" (Kipps, 1909, p. 139). The extent to which geography could respond to the changing educational environment and to the needs of the society, is the concern of the next section.

6.3.2 **British geography: A tradition transplanted**

The introduction of "modern, scientific" geography in South Africa dates back to the early years of this century, deeply rooted in the British tradition of that time. The renascence in British geography since the publication of the Keltie Report in 1886, and Mackinder's propagation of a "new" geography,

initially had no impact on the discipline in South Africa. Geography teachers were, however gradually exposed to modern developments in British geography, especially through publications such as The Education Gazette and The Educational News. The South African geography teacher was, for the first time, introduced to the work of a professional geographer, through a reprint from School World of Herbertson's article: "The Geography of South Africa" (The Educational News, 1901, p. 117). In this article Herbertson discussed the physical features of the country and also suggested literature of relevance to the study of South Africa. This was followed by another reprint from School World in The Educational News concerning geography for Matriculation at London University, in which the writer expressed the opinion that students who took up matriculation geography in the future would be expected "to study the subject in a rational and scientific way; that the era of the why and wherefore, cause and effect, is inaugmented, and that principles must be learnt and the capacity for applying them shown" (The Educational News, 1902, p. 165). This concern for a "scientific" and "modern" geography, culminated in the publication of the "Syllabus of Instruction in Geography" in The Education Gazette, produced under the auspices of the Royal Geographical Society in Britain. The Department of Education regarded it as such an important document, that the permission of the Royal Geographical Society was asked to reprint the syllabi for both the elementary and the higher examinations (APPENDIX 3.C). In the introduction to the syllabus for the higher examination, the following very important argument

concerning the nature of geography, was presented:

> "Geography, at any rate in the school, must be considered from the human standpoint. The object of the teacher is to build up a conception of the surface of the earth as the product of inter-acting physical forces, in order that the surface may be intelligently viewed as the scene of social activities. It is therefore clear that the geographical teaching should be related to the teaching on the one hand, of natural science, and, on the other, of history. A frequent practice is to treat physical geography or physiography as an introduction to natural science, and for the rest to be content with the employment of atlases during the teaching of history. The result is that the two sides of the subject are not habitually connected in the mind of the pupil. The remedy probably lies in the teaching of geography on a regional basis, with such a distribution of the physiographic explanations as shall not obliterate the regional interest. At every step in the treatment the learning of the topographical data, their physical analysis and their application to the facts of human society, whether commercial, political, or historical, should be closely correlated" (The Education Gazette, 1904, p. 322).

The "man-environment relationship" was presented as fundamental to an understanding of the nature and scope of geography, and it undoubtedly set the scene for the future development of geography in South Africa. The man-environment theme was readily accepted within the South African context. In his endeavour to prove the intellectual value of geography, Chubb argued as follows: "We do not teach geography in order to show the way to Grahamstown ... But the boys who learn geography may think why it is that South Africa and North America, discovered by Europeans at the same time, are today so vastly different, and thence rise to some perception of the influence of man on the world, and of the world on man and his character" (Chubb, 1905, p. 147).

This initial contact with the British "new" geography, through the pages of The Educational News and The Education Gazette, was later established with the founding of a South African Branch of the Geographical Association.

6.3.2.1 The Geographical Association : The South African branch

In many West European countries various geographical societies vigorously promoted the study of geography in schools and in universities. In Britain the Geographical Association was established in 1893, not only to promote the study of geography, but also to improve the methods of teaching the subject. Geography in South Africa was, however, introduced into the school system, and taught for almost seventy years without the assistance of any such organisation. The first steps towards the establishment of a geographical society for South Africa were, however, taken in 1905. In September of that year Dr A J Herbertson, then reader in geography at the University of Oxford, visited the country on behalf of the British Geographical Association, of which he was the Honourary Secretary. Dr Herbertson addressed a meeting specially convened for the purpose of discussing the advisability of starting a branch of the Association in South Africa (The Education Gazette, 1905a). After his address a resolution was adopted that a branch of the association be formed in South Africa. This was gladly welcomed by the Education Department, and it

gave its entire approval and sympathy to the movement.

At a meeting held on the 10th of November 1905 at the S A College, the S A Branch of the Geographical Association was officially founded. Its aims, with the focus on the diffusion of knowledge rather than actual research, were set out as follows (The Educational News, 1905a, p. 152):

1. To stimulate interest in the teaching and study of Geography by means of papers, lectures, discussions and excursions.

2. To gather books together for a geographical library and to recommend suitable ones to schools.

3. To make a collection of lantern slides suitable for use in educational institutions.

4. To secure the deletion of uneducational questions in geographical examination papers.

5. To keep the outside world correctly informed on questions of South African geography, and revise incorrect statements in textbooks.

6. To work for the publication of a reliable series of divisional geographical books by South African authors if possible, and at any rate suitable for South African Schools.

The working committee of the South African Branch of the Geographical Association consisted of the following people:

President:	Prof A Young, MA, BSc, SA. College, Cape Town.
Vice-Pres.:	C M Stewart, BSc, Secretary of the Meteorological Commission
	R Marloth, PhD, Analyst, Cape Town.
	J Smith, MA, Vice-Principle, Normal college, Cape Town.
	F MacDermott, Editor, "Agricultural

Journal"

Hon. Tres.: James Rodger, MA, Education Office, Cape Town

Hon. Sec.: W H Taylor, SA College School, Cape Town.

The working committee of the newly founded South African Branch of the Geographical Association, regarded geography as so important for the future development of the Colony that an appeal for support was made to several prominent public "men". Besides the acting Superintendent General of Education several prominent people expressed sympathy with the Branch (The Education Gazette, 1905b, p. 313):

> Sir W Hely-Hutchinson, Governor
> Dr Smart, Acting Premier
> Sir David Gill, HH, Astronomer
> Sir W Bisset Berry
> A H Cornish Bowden, Esq, Acting Surveyor-General
> Dr W Darley Hartley
> D E Hutchins, Esq, FR Met Soc, Conservation of Forests.
> A W Rogers, MA (Geological Survey).

With respected educationists and scientists on the working committee, and the support of "prominent men", geography had gone a long way in improving its image. The involvement and support of all these people, could be interpreted as an endorsement of the value of geographical education in South Africa. The endeavour of the Geographical Association to establish branches not only in the United Kingdom, but also in the Colonies should, however, be seen in a wider context: "... it seeks to unite teachers in different parts of the empire in

a common effort to further the true principles of Geographical Education. The aim of the Association is 'to improve the teaching of geography by spreading the knowledge of all such methods as call out the pupils' intelligence and reasoning powers, and make geography a real educational discipline, instead of merely loading the memory with names and isolated facts'" (The Education Gazette, 1905b, p. 313). But there was much more behind these stated educational objectives. About the same time as Herbertson visited South Africa, G R Parkin, Organising Secretary of the Rhodes Scholarship Trust, addressed the Annual Meeting of the Geographical Association, of which he was a former vice-president[1]. He informed the meeting about his world travels and in particular his travels in the British Empire and concerned himself with the work of the Association in promoting a better knowledge of the geography of the empire. He was of the opinion that the significance of geography in imperial matters was receiving more adequate recognition. He also felt that,

> "The efforts of the Association were prospering, but they were merely the beginning of a work to which there was no limit. If in every town of 10 000 inhabitants in these islands and in the colonies branches of the association were formed for the study of local geography, and if this were coordinated with general geography, a great work would be accomplished. A close and careful study of local conditions was necessary for the understanding of the local problems and the continuance of local prosperity. It also stimulated an interest in wider issues and led to a recognition that each region was ultimately bound up with a greater whole" (The Geographical Teacher, 1905/6, p. 143).

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[1]Prof A Young, first president of the South African branch of the Geographical Association, attended this meeting.

It was also hoped that teachers in Britain would feel that in the members, and especially the officials, of colonial branches they might find correspondents who could help them in connection with the geography of the Britains beyond the sea.

The Geographical Teacher, of which Dr Herbertson was the editor, was the official organ of the Geographical Association and it also received the full approval of the Department of Public Education in the Cape Colony (The Education Gazette, 1905b). It was held in such high esteem by the Education Department, that it was prepared to contribute fifty percent of the subscription fee, "Teachers may again be reminded that, if they desire to subscribe to this excellent journal, the Department is prepared to refund half the annual cost. It is well to remember that, if one's teaching is to continue fresh and suggestive, one must read and keep in touch with the latest development of the subject" (The Education Gazette, 1906a, p. 41).

The South African Branch of the Geographical Association ceased to exist in 1907 and its membership transferred to the parent association. In communicating this information the secretary writes:

> "That there is plenty of scope for a branch in South Africa is only too painfully evident from the report of the examiner in geography to the Cape of Good Hope University. Even that examination has now been cancelled, and the subject receives no official recognition whatever even as an optional subject from the University. The country is now in a very depressed condition and you would scarcely credit the apathy shown, not by the department, but by individual teachers in anything educational" (The Geographical

Teacher, 1907/8, pp. 49-50).

The transference of membership, however, assured the continued influence of British geography in the development of the discipline in South Africa.

6.3.2.2 **Herbertson and the aftermath**

Dr A J Herbertson was the first professional geographer to visit this country and to address a group of local people interested in geography, among them teachers and academics. In his lecture at the South African College in 1905, Herbertson identified various issues to be addressed by local "geographers" (Cape Times, 1905). First among them was the question, "What is geography?" Although many would regard geography to be the mother of the sciences, Herbertson stressed the fact that it has a field of its own and that it should be regarded as an independent science. Another very important issue Herbertson touched on, was the question of local geography. He emphasised the ethical value of geography as well as the extent to which it could encourage patriotism. Knowledge of one's home region, according to Herbertson, could evoke an interest and a concern for that region. Commenting on this, the Cape Times wrote: "The opinion was widely expressed in South Africa that the home people did not understand the country; a study of geography would greatly remedy that" (Cape Times, 1905). Other issues dealt with by Herbertson include the importance of map and globe

work (he congratulated Dr Muir and Mr Bartholomew on their atlas, which, according to Herbertson, was one of the best in the world), the teaching of physiography in the lower schools, topographical formation and climate in South Africa. He warned, however, against the teaching of political geography because it was so difficult and the less it was dealt with at school level the better. In retrospect, one might say that Herbertson's visit to South Africa and the establishment of the South Africa Branch of the Geographical Association provided the necessary impetus for the development of geography on "modern" and "scientific" lines.

In 1906 The Education Gazette, carried an extensive commentary on a British document concerning suggestions for teaching geography (The Education Gazette, 1906b). The Education Gazette (and by implication the Department of Education) was highly impressed by the document and especially with its value for stimulating the teaching of geography in South Africa, as it was, "... inspired by broad views of the great educational value of the subject even in the elementary school course" (The Education Gazette, 1906b, p. 622). The nature and scope of geography, a fundamental concern among many South African teachers and educationists at the time, was clearly stated in the document, and was in line with the Royal Geographical Society's conception of geography, referred to above. The Education Gazette highlighted the following definition of geography in the report: "Geography is concerned with the earth's surface, the condition of its various parts, their

relations to one another, and the influence of those conditions and relations on plant life, on animal life and specially on human life" (The Education Gazette, 1906b, p. 622). What is significant of this definition is the fact that it went further than merely a concern with "relations". The influences of the environment on, among others, human life, are explicitly mentioned.

The document also provided the Education Department with the ideal opportunity to relate geography to the changing educational environment in South Africa. The opportunity was grasped to show how geography could contribute to the mental and intellectual development of the child. It anticipated, on the basis of the suggestions, that the study of geography might become a "high means of mental culture": "To be able to reproduce in imagination pictures of varied scenery the earth presents ... is one of the purest and most natural forms of aesthetic pleasure" (The Education Gazette, 1906b, p. 622).

The contribution geography could make to the development of intellectual reasoning was particularly emphasised. To show the extent to which geography could be taught in an intellectual satisfying way, the following passage is quoted from the document: "The influence of geographical conditions in history is more clearly evident in the great movements of world history, and the teaching of geography may properly include some rapid surveys of the general march of civilisation westwards from the most ancient times, of the great migrations of races, and of the

rise of modern nations" (The Education Gazette, 1906b, p. 622). The extent to which the Department of Education was prepared to follow the suggestions slavishly is revealed in the following excerpt:

> "If we read in the following passage Cape Colony instead of Great Britain, the recommendations will serve to define, as exactly as may be, the lines on which the teaching of the geography course for Standard IV should proceed ... 'The systematic study of our own country should now begin. It has long been recognised that a bare enumeration of unconnected facts, such as a list of capes and bays, and the names of mountains with their exact heights, is of no educational value. As a preliminary step, Great Britain should be divided into its natural regions as determined by the relief of the land, and each region should be treated separately. The influence of the physical features of a region upon the occupation of its inhabitants will then be seen, and incidentally much light will be thrown upon the history of our country'"(The Education Gazette, 1906b, p. 623).

Another fundamental component of the "new" geography that came to the fore in the above excerpt was a particular emphasis on the concept "natural region". The significance of this is that the concept "natural region" is directly linked to Herbertson's geography. The Education Gazette also felt that the document provided the necessary guidelines as to the kind of topics that ought to be included in geographical lessons, especially for older scholars:

> "In this stage of the teaching the general conceptions of the bearing of geography on history which will have been touched on in the earlier teaching may be more systematically developed. For example, the relative importance of seas and mountains in keeping men apart, and their relative importance as political boundaries; the influence of climate, soil, and extent of seaboard in determining national occupations and national

> characteristics; the study of communications - artificial, such as roads, railways, and canals, and natural, such as seas and rivers - leading up to a knowledge of the great trade routes of past and present times, and to reasons for the growth and decay of certain of them; the causes of the growth and decay of towns: all these will afford a wide field of ideas which can be introduced with advantage into the teaching of older scholars" (The Education Gazette, 1906b, p. 623).

Inherent in the above quote is the suggestion that geography could also be taught to pupils other than those in the lower classes, as was suggested by Shaw (1886), twenty years previously.

A major shortcoming of the document, according to The Education Gazette, was the omission of the industrial and commercial aspects of a school geography. A focus on such aspects, at least in South Africa, was seen to be necessary, especially in the light of a continued process of economic growth since the beginning of the twentieth century. In particular, the process was marked by the commercialisation of white agriculture and the establishment of the manufacturing sector, ideal themes for geographical lessons within the context of the "new" geography. In general, however, one could regard the report in The Education Gazette as being an official sanctioning of the nature and scope of geography, presented in the document. This was indeed reflected in a vacation course held later during the same year, during which the methods of the "new" geography and their application to the Cape Colony were introduced. The "Suggestions to Teachers", was employed to give support and authority to some of the principles laid down (The Education Gazette, 1906b).

The idea of a "new" geography was later picked up by The Educational News, which was clearly impressed by the latest developments in the discipline: "A great deal of attention is now-a-days being directed to the teaching of geography. The old days of cram are rapidly passing away, and thanks largely to the geographical and similar associations, people are recognising that geography, scientifically taught, can be made an excellent mental training" (The Educational News, 1908, p. 20). To underline this "modern spirit" in geography The Educational News published in full the new syllabus in geography for the Elementary School Teachers' Certificate (for 1909) of the Education Department in England. As was the case with the "Suggestions to Teachers" this syllabus also clearly stressed the connection of physical geography with historical, political and economic geography. (APPENDIX 3.D).

Towards the end of the first decade it became clear that geography as a school subject, had finally made a breakthrough in South Africa. This is reflected in an editorial article, published in The Educational News of December, 1909:

> "The ideas of educationalists on the function of Geography in the school curriculum have undergone a complete and fundamental change during the past few years. The subject was often neglected, and where it received attention it was taught from a purely utilitarian point of view. If the student had a sufficiently large supply of facts stored in his brain the teacher had attained his object. The subject was not catalogued as a "science", and therefore the question of teaching it scientifically was not often considered. It was regarded as a utilitarian subject like spelling, and the idea of teaching it for the sake of the mental training it afforded had hardly been conceived" (The Educational News, 1909b, p. 167).

Via The Education Gazette, geography teachers were regularly introduced to the latest publications on the "new" geography. They were encouraged to acquire the books and to study the improved methods of teaching geography. During the early years of the second decade, a major concern for those promoting the teaching of geography, remained the question of its field of study, in particular the vastness of the subject-matter as well as its vague outline. This, according to The Education Gazette (1913), could have been the reason why certain scientists refused to recognise geography as a science. In defence of geography, The Education Gazette referred to J A Thompson, who argued that sciences were not distinguished from one another by their subject-matter, but by its point of view. The point of view which distinguished geography from any other scientific endeavour, was its concern with "... the earth and all its attendant phenomena as conditioning the life of man", or as it was familiarly defined: "The earth as the home of man".

In summary, what has been revealed in this section is the extent to which the Education Department and the SATA were instrumental in promoting the teaching of geography on modern lines. This was mainly done by publishing British geography syllabi, and reviewing and printing articles from British publications, such as The Geographical Teacher. This, together with Herbertson's personal influence, resulted in a transplantation of the Oxford geography tradition of the late nineteenth and early twentieth centuries.

Since the Herbertson visit, and the establishment of the South African Branch of the Geographical Association, various "geography enthusiasts" took it on their shoulders to promote and facilitate the academic debate regarding geography within the South African context. With the necessary support of the Education Department, and the South African Teachers' Association these enthusiasts became the main advocates for academic geography in the pre-academic phase.

6.3.3 Faithful followers: Contributions by South African scholars

The first academic contribution to the debate regarding geography in South Africa came from James Flowers. In a paper delivered at a meeting of the South African Association for the Advancement of Science, Flowers (1905/6) addressed the question of "Geography as a Factor in Higher Education". His main objective was to stimulate an interest in the claims that geography had for admission in the curricula of the colleges and University of the Cape of Good Hope. Among the more important issues addressed in the paper were the negative attitude of the University of the Cape of Good Hope and the problems associated with defining geography as a field of study. Concerning the former the paper noted, quoting from an article in the "Star", that "... the official opinion of the Chief Educational Institution in South Africa is that Geography is a study neither suitable nor necessary for boys above the age of 12" (Flowers,

1905/6, p. 213). This attitude, according to Flowers, was largely based on misconceptions, but also on a lack of a clear definition of the field of geography. As a working hypothesis, he suggested that, " Geography is the science which details the earth's dictation to life"

To support his views on geography, Flowers (1905/6) quoted freely from the work of prominent British geographers such as A J Herbertson, S Mill and Sir Clement R Markham. The work of writers such as these was also used to generate the necessary support for the introduction of geography in higher education. It is, in the light of this, perhaps relevant to repeat some of the quotations Flowers used. Geographical knowledge was seen to be of fundamental importance because, according to Sir Clement, geographical ignorance, "... is the cause of loss in commerce, of disaster in war, and blunders in administration. Until merchants, soldiers, seamen, engineers, lawyers, and above all, statesmen, are also Geographers, these evils will continue" (in Flowers, 1905/6, p. 213). This utilitarian value of geography was further underlined by quoting from Herbertson: "Surely it's only common sense to see that it is properly studied by those who will direct great enterprise. When its educational and practical value are both taken into account, only ignorance or inertia or the influence of vested interests can explain its omission from the higher classes of schools, or from the Universities" (in Flowers, 1905/6, p. 213). Reflecting on the nature of geographical enquiry, Flowers sought support from Mill:

"... the glory of Geography as a science, its fascination as a study, and value in practical affairs arise from the recognition of the unifying influence of surface reliefs in controlling the incident of every mobile distribution of the Earth's surface; and that the grand problem of all must be the demonstration and quantitative proof of the control exercised by the forms of the Earth's crust upon the distribution of everything which is free to move or be moved; that is to say, the physical conditions of environment to organise response" (Flowers 1905/6, p.213/4).

Flowers concluded his paper by expressing the hope, "... that geography in some co-ordinated form will soon find a place in our educational institutions, which becomes a positive necessity if the dream for South Africa's future is to be realised ..." (Flowers 1905/6, p.214). There was no follow up on this paper and the debate on "Geography and Higher Education" was again restricted to the limited confines of The Education Gazette and The Educational News.

In 1905 the Rev Datry, in a lecture to the members of the Oudtshoorn Teachers' Association, emphasised the "complete revolution" in the method of teaching geography which had taken place and was of the opinion that the teaching of geography was becoming more and more the work of specialists (The Educational News 1905b). This sentiment was shared by Ritter, teacher at the George Boy's High School[2], in a letter to The Educational News

[2]Biographical notes:
Date of birth: 6 February 1877
Teaching: 1-1-1898 - 30-6-1902: George Blanco School
1-7-1902 - 30-6-1910: George Boys' High School
1-7-1910 - 30-6-1924: Robertson's Training School
1-7-1924 - 31-3-1931: Oudtshoorn High School
Retirement: 1931

in 1907 in which he was very concerned about the position geography occupied in the schools. He referred to the positive developments in geography in Britain, and felt that for any real success with geography, it would be necessary to do everything possible to promote the development of geography as a science. Only as such, according to Ritter, could it be an effective educational power to promote the training of the powers of observation, and description (Ritter 1907). To substantiate his plea for more and better geography, Ritter (1907) quoted from Herbertson:

> "For the world's sake, as well as for our country's and our own, we must have in this 20th century as full and intelligent a knowledge of the world as possible. Ignorance of geography produces frequent friction and occasional wars, stupidity in commercial enterprise, hasty and reckless councils in our journals and loss of life ... Be it politics, finance or commerce, missionary zeal or the mere pursuit of health and pleasure, our end will be more effectually attained if we have studied environment" (in Ritter 1907, p.154).

To achieve this, Ritter (1907) argued that geography teachers needed specialist training and that geography should therefore be a compulsory subject for all teachers' examinations. He also urged the University Council to consider the question of introducing it into the School Higher and Matriculation examinations. Ritter's concern with geography was clearly related to his experience at the University of Oxford, at which he was a student in 1907 (APPENDIX 3.E).

Two years later, in a lengthy article, Ritter (1909) again concerned himself with the way geography was treated in South

Africa, this time, however, in a much more systematic manner. He wrote about the status of geography in other countries, the concept geography, the value of studying it and how to deal with it in the classroom. Ritter (1909) emphasised the fact that in Germany, the United Kingdom, France and in the United States, geography had already developed into a respected discipline within the universities and that much was being done to establish the subject in schools and in the universities. Clearly influenced by writers such as Mill and Herbertson, Ritter described the nature and scope of the discipline in the following way: "It is the science which deals with problems of distribution - more particularly on the surface of the earth - the distribution of land, water, air, animal and vegetable life, and man; and it investigates the relationships which exist between these and their influence upon one another" (Ritter 1909, p.100). Ritter saw the importance of a geographical education in terms of three facets: (1) its "discipline" i.e. as a mental discipline, according to Ritter, it trains the observation, it directs attention and it develops the reasoning powers, (2) its role in preparing the student for practical life. Geographical knowledge is needed by the merchant, the manufacturer, the politician, as well as by professional men like doctors, clergymen, journalists, (3) its pleasant nature i.e. learning about the environment in a very practical way ought to be interesting to all children. In this article Ritter pleaded again with the Education Department and the University Council to recognise geography for the University School Examinations.

Ritter's conception of geography was in direct response to the demands of the "new" education debate, which concerned the need for science education, the practical value of subjects, the development of the mental faculty and imagination. Ritter went so far as to develop an alternative syllabus in geography (APPENDIX 3.F). The Education Department regarded the syllabus in a very positive light, but warned that "Teachers who may feel inclined to profit by it in this way will, of course, understand that the requirements of the Department's syllabus must receive undiminished attention" (The Education Gazette 1909, p.603).

Apart from having promoted modern and scientific geography in a very rigorous way on paper, Ritter was also heavily involved in presenting vacation courses for teachers for both the Education Department and the SATA (Ritter 1904, 1905). This afforded him with the ideal opportunity to introduce teachers to modern ideas, and teaching methods. Having been most actively involved in advocating the value of scientific geography and the need for it in the higher examinations of the University, Ritter could well be regarded as the first pioneer in the history of South African geography.

The long and arduous struggle for a proper place for geography within the educational system of South Africa, culminated in three very important papers, delivered at different conferences, towards the middle of the second decade. The significance of this lies in the fact that the presenters of these papers were afforded the ideal opportunity of presenting pleas for the

inclusion of geography in the higher examinations, from very important public platforms.

In a paper, "On Geography", read to the Cape Division Teachers' Association in 1914, J Hutcheon[3] introduced the topic with a brief review of the history of geographical thought and education, with particular emphasis on the academic nature of geography. He, discussed the extent to which geography had been established at universities in France, Germany, Austria, Switzerland, Italy, Denmark and the Netherlands. He concluded that, the fact that geography was not yet an university discipline in South Africa, could be ascribed to the bad image it had among some South African scholars: "Of recent years, in educational circles, perhaps no subject has been more frequently discussed than geography. Some have condemned it without a hearing, probably because their ideas of the subject were based entirely on the mechanical, dry-as-dust, teaching of which they were the victims some ten or twenty years ago" (Hutcheon 1914, p.56). Hutcheon (1914) saw the task of the geographer in the following terms: (1) to explore the earth, sea, and air, and to cartographically express the results of his investigation, (2) to trace the connection between the land forms and subterranean and climatic forces, (3) to explain how the distribution of vegetable life is dependent on soil and atmospheric conditions, and how animal life receives its sustenance from the vegetable world. On the basis of such investigations the geographer should

[3]James Hutcheon, a Scott, was appointed at The South African College School in 1914, to teach the newly subject of geography in the elementary classes (South African College, 1914).

then be lead to the conclusions that, "... the distribution of man is directly influenced by the presence or absence of certain animals, plants or minerals. The combinations of all these (i.e. land forms, climatic conditions, vegetation, etc.) brings about the development of certain characteristics in races, religions, and governments, the rise of industries, the gravitation towards city-centres, the foundation of states, and the establishment of commerce" (Hutcheon 1914, p.56).

Hutcheon recognised the difficulty of defining geography precisely, because of its particular relationship with other disciplines and fields of interest for example discovery, surveying, geology, meteorology, botany, history and anthropology. While the critics of geography saw the question of definition as a fundamental weakness, Hutcheon saw geography's relationship with other disciplines, and consequently its interdisciplinary nature, as a point of strength.

In a paper, entitled "Geography", read at a conference of the SATA, Jamieson (1914) suggested two reasons for geography's failure to be incorporated into the curriculum for the University's higher examinations, namely, a congested curriculum, and the problem of classification. As far as the latter is concerned, Jamieson argued that geography is left aside largely because of the arbitrary division of subjects. He had no doubt that geography was and will remain important, because traces of the subject was found in many other lessons,

like reading, history, mathematics, drawing, etc. Geography, according to Jamieson (1914), must and will be taught, it only depended on whether or not it was sufficiently valuable to have a definitive place in the curriculum (Jamieson 1914, p.124).

In order to address this problem, it was imperative, according to Jamieson, to clearly understand what geography was. He agreed with Hutcheon (1914) that the indifferent attitude towards geography existed because people did not clearly understand what the subject was. Many still regarded geography as a long, meaningless succession of names. To counter this perception, he suggested various ways to make the subject more popular and to raise its academic status: (1) geography had to be rationalised, so as to show some link of association between physical features, (2) geography had to be humanised. The study of climate, natural products and physical surroundings of a country had to be shown to affect the people of that country, (3) geography teaching should involve the making of source-books, (4) practical work should supplement the study of "true Geography", (5) suitable text books (i.e. with a South African perspective) needed to be written, and (6) geography had to be correlated with other subjects, especially with literature and history. He concluded his paper on a very positive note: "... I think the subject of Geography is about to experience a most welcome and deserved revival, not only in our day-schools, both primary and secondary, but also in the highest colleges and universities. It has everything to recommend it; it is useful; it is interesting; it requires logical reasoning; in short it

affords one of the most vulnerable and educative features of the curriculum" (Jamieson 1914, p.126).

Almost a decade after Flowers addressed a conference of the South African Association for the Advancement of Science on the topic of geography, Hutcheon was afforded the same opportunity. This ought be seen as a significant breakthrough for those who were intimately involved with promoting the cause of geography in South Africa. In his address Hutcheon (1915a) claimed that, in South Africa the day of geography was just dawning. To substantiate his claim, he mentioned the new courses for the training of teachers, established by Provincial and Union Education Departments, as well as various other aspects of geographical endeavour, for example, the detailed contour maps that were available for several districts as well as school books written from a South African point of view.

Until the time of Hutcheon's address geographical research was clearly not a priority. All energy was spent on promoting the discipline in South Africa in the light of its status overseas and the contribution it could make to general education within South Africa. However it was gradually realised that, in order to make a "scientific" impact, geographical research will have to be put on the agenda. In his address, Hutcheon divulged details of a Geographical Census under the auspices of "several men" who had already formed themselves into a nucleus of a Geographical Society, with their main aim to consider the preparation of South African geographical monographs. Hutcheon

included in his paper a resumé of a proposed scheme of local investigation. It covered aspects such as climate, production land under cultivation, animals, minerals, industries, exports, imports, means of transport, chief trade routes, means of communication and centres of population. Such work was regarded as of immense importance, as a knowledge of "home geography" and the need for text books with a South African perspective, became more and more important. Hutcheon (1915a) regarded research and the dissemination of geographical knowledge and information as of such tremendous importance, that he proposed the establishment of an Imperial Geographical Information Bureau (The Educational News, 1914). This was clearly in line with Herbertson's suggestion in his presidential address to the British Association for the Advancement of Science in 1910 (Hudson, 1985). In his address, entitled, "The Geographical Factor in Imperial Problems", Herbertson advocated the establishment of Geographical Statistical Departments in various countries, especially those within the British Empire, to undertake research concerning the economic value of these countries (see also Parkin's suggestion on pp. 181/82 above).

Hutcheon, himself, became increasingly involved in developing ideas for the study of local geography (Hutcheon 1915b). He was particularly interested in aspects of climatic control, as his notion of the scope of geography indicated: "The true sphere of the geographer is the study of man's relation to his environment, both 'passively' and 'actively', and of all the geographic controls which constitute that environment, e.g.

position, elevation, area, distance from the sea, rivers, configuration, surface-imposition and climate, the last is the most important" (Hutcheon 1915 b, p. 74). The importance of climatic control was also reflected in his paper to the South African Association for the Advancement of Science: "Of all the external modifying forces which influence mankind, there is little doubt but that climate is, in the main, responsible for the different stages of his physical, mental and moral development" (Hutcheon 1915a, p.328). This conception of geography, i.e. the study of the influence of the environment on man, also enunciated by Ritter and Jamieson, and promoted by the Education Department and the SATA was solidly embedded within the environmental or geographic determinist tradition of the late nineteenth and early twentieth century. The influence of the physical environment on man was one of the most important concerns of both European and American geographers, during this time. This period also saw the publication of three of the classics of deterministic geography, namely, Ratzel's Anthropogeographie (1882-91), Semple's Influences of Geographic Environment (1911), and Huntington's Civilisation and Climate (1915). These publications were never quoted in the South African literature. However, the main ideas, included in these publications, reached the South African geographic scene, via the contact with British geography. It is perhaps significant to note that a reprint of Semple's article, "Mountain Peoples in Relation to their Soil", was published, in full, in The Educational News of 1906. The fact that the article was published, is an indication of the importance attached to the

kind of views espoused by geographers like Semple:

> "Fundamental to the study of geographic environment is the relation of a people to its soil. From the nature of that soil, the proportion of it available for economic purposes, the possible methods of its exploitation, the amount and kind of its products, and the ease or difficulty in marketing the same, spring a long time of direct and indirect influences of geographic conditions which leave their stamp upon the national life and character" (in The Educational News, 1906, p. 156).

Hutcheon's concern with climatic control is in line with the main argument in Huntington's Civilisation and Climate. It is, however, not clear by whom Hutcheon was influenced. In an article, "Some Aspects of Climatic Control", he stated that,

> "Anthropologists inform us that man's physique is largely the outcome of adaptation to environment, and, although there is a tendency in such studies to formulate generalisations without sufficient data, it is admitted by most authorities that climate and the other factors regulated by it, such as food and occupations, have had no inconsiderable influence in modifying both size and colour of the various branches of the human family. ... the influence of climate on sports, customs, social conditions, intellectual pursuits, temperament, and religion is full of interest ..." (Hutcheon, 1915b, p.75).

A concern with climatic control, within the context of geographic determinism, was, according to Hudson (1985), an attempt to give scientific support to the widely-held belief that high levels of civilisation could only be achieved in regions of stimulating climate and that monotonous tropical heat had a stunting effect on human development. The implications of such a belief has been analysed by Hudson (1985) in a very

illuminating way. Climate was regarded as the main single determinant which gave Europeans their supposed superiority in the struggle for survival:

> "... it was a widely-held view that the character and achievements of the peoples of the world were largely determined by physical or 'geographical' factors, especially climate. The supposed superiority of the European and their descendants in suitable environments overseas had been determined by Nature which had also condemned less fortunate peoples to inferior status. The white man, therefore, saw himself as the natural inheritor of the world's wealth and master of its peoples" (Hudson, 1985, p.39).

Thus, according to Hudson (1985, see also Peet, 1985) environmental or geographic determinism was used as an ideological buttress for imperialism and racism. The idea of environmental control found fertile breeding ground in South Africa after the establishment of Union in 1910 as there was a concerted effort since 1910 to eradicate the British - Afrikaner divide in the South African society. This was gradually replaced by a white - black divide. With a long history of legitimising imperialism, and aspects such as racism, class domination, and exploitation (Peet 1986), geography was seen to be ideally suited to address these issues within the South African situation. It is perhaps not too far-fetched to argue that it might be the environmentalist paradigm, as was the case in Western Europe, which "rescued" geography from its peripheral position within the South African educational system, and which gave it some "respectability" among academics. Environmentalism provided geography with a framework for explanation, a basic component of any science. This more "scientific" geography paved

the way for geography's incorporation into the curriculum for the university's higher examinations, as was made clear by Hutcheon himself: "... there is certainly no occasion for dissatisfaction, for a survey of the progress of the subject in South Africa during the past two years leads to the conclusion that slowly but surely are being laid the foundations of a geographical education which shall be wide in range, scientific in method, and, let us hope, productive of much good, commercially, civically and culturally" (Hutcheon 1915a, p.332).

In the light of our analysis thus far, it is clear that the foundation of modern and scientific geography, was definitely not laid over a two year period, as Hutcheon would like us to believe. The laying of the foundation was a long process, which originated at the turn of the century. With the influence of the Royal Geographical Society firmly in place in geographical education in South Africa, the colonisation of geographical thought entered a new phase with Herbertson's visit and the subsequent establishment of the South African Branch of the Geographical Association in 1905.

Although Hutcheon could claim a philosophical and methodological breakthrough for geography in 1915, a final question that remains to be answered is: To what extent did the new ideas filter through the educational system. In the following sections we will endeavour, not only to answer this question, but also indicate the extent to which a need had been created for more and better training in geography.

6.4 THE INTRODUCTION OF THE "NEW" GEOGRAPHY

Since the beginning of this century and especially since 1905, much has been said and written regarding the "new" geography. Geography was also actively promoted on the basis of its scientific and utilitarian value and on various occasions the authorities were approached to include geography as a subject for examinations beyond the elementary school.

Through the publication of British geography syllabuses, book lists, and article reviews in The Education Gazette and The Educational News, geography teachers were kept informed about the new developments in geography, both on a theoretical and methodological level. However the first concrete step to implement the new ideas and concepts, generated by the "new" geography debate, came about with the establishment of a committee by the South African Teachers Association to develop a scheme for the "Revision of the Syllabus in Geography" (The Educational News, 1910, p.47. APPENDIX 3.G). This committee was set up in 1910 and consisted of:

T Young
G McRobbie
H Jamieson
G B Kipps
H G Eaton

The committee's conception of geography, was very well located within the geographic deterministic framework. As a basis for their own work, they adopted, verbatim, the definition of geography in the British document, "Suggestions for Teaching

Geography", reported on in The Education Gazette, in 1906. The committee felt very strongly about the fact that geography should not be taught in isolation, but that it should be seen to be closely connected to all the subjects of the school course, for example, history, arithmetic, nature study, woodwork, physics and chemistry, domestic economy, and reading. The committee further emphasised the threefold aspect of geography, namely, physical, political and statistical, but that it should not be treated as separate entities.

The purpose of a geographical education could, according to the committee, be best served if the teaching of the subject could be: (1) Inductive, i.e. the children should be led, under the guidance of the teacher, to form their own conclusions from personal observation of the natural phenomena surrounding them, (2) Realistic, i.e. no method should be neglected whereby geographical conceptions may be vitalised. (3) Practical, i.e. every encouragement should be given to careful observation of natural phenomena. All these aspects were eventually incorporated in a detailed outline of how geography should be treated from Below Standard to Standard VII (APPENDIX 6.M). Geographical relationships and the inter-relatedness of history and geography were particularly emphasised. The scheme was eventually adopted by the Cape Division Teachers' Association.

The "new" geography also found its way into the Third Year Senior-Pupil Teachers' Course, in 1912. The theoretical basis for this course was clearly modeled on the ideas presented by

the South African Teachers' Association committee. The syllabus was accompanied by a detailed, and up-to-date book list (APPENDIX 3.H), which had much in common with a similar booklist published in an article by J F Unstead, and reported on, in The Education Gazette (1908, p. 373. APPENDIX 3.I). The suggested literature for the Third Year Senior Pupil-Teachers' Course, differed altogether from that of the Pupil-Teacher Examinations of 1905, and included the following:

General and Regional Geography

* Guide to Geographical Books and Appliances
+ Mort, F.: A Regional Geography for Intermediate Classes
+ Young, E.: A Rational Geography
+ Reynolds, J.B.: Regional Geography
+ Unstead and Taylor: General Regional Geography
+ L'Estrange, P.H.: A Progressive Course in Comparative Geography
+ Heaton, E.: The Senior Scientific Geography
+ Fry, G.C.: A Text Book of Geography
* Mackinder, H.J.: Elementary Studies in Geography
* Herbertson, A.J.: Senior Geography
* Herbertson, A.J. and Herbertson, F.D.: Descriptive Geography
* Webb, E.J.: Africa as seen by the Explorers
* Newbigin, M.: Modern geography

Human Geography

* Chisholm, G.G.: Handbook of Commercial Geography
* Lyde, L.W.: Man in Many Lands
* Herbertson, A.J. and Herbertson, F.D.: Man and his Work
* Peeps at Many Lands and Cities. A. & C. Black
*+ Brown and Johnston: The New Outlook Geographies
* Readable Books in Nature Knowledge. McMillan & Co.

* Readable Books in Nature Knowledge. McMillan & Co.

Physical Geography

Huxley and Gregory: Physiography
Mill: The Realm of Nature
Herbertson, A.J.: Outline of Physiography
Gregory: Geography: Structural, Physical and Comparative
* Rogers and Du Toit: The Geology of the Cape Province
* Bonacina: Climatic Control
* Geographical Pictures. A. & C. Black
* Farmer (ed): The Book of Nature Study
+ Carey, W.M.: A First Book of Physical Geography

The Teaching of Geography

* Laurie: The Teacher's Encyclopaedia
* Welton,J.: Principles and Methods of Teaching
* Suggestions for the Consideration of Teachers
* Lyde, L.W.: The Teaching of Geography
* Mackinder, H.J.: The Development of Geographical Teaching out of Nature Study
* The Geographical Teacher. Publication of the Geographical Association
* The Scottish Geographical Magazine. Publication of the Scottish Geographical Society

* Books specially useful as text-books (either for teachers or pupils
+ Books which should be considered essential for a large Training College reference library

The person closely involved with the drawing up of this booklist was A B Lamont, Departmental Instructor in Nature Study, and teachers were referred to him for further information. Lamont drew up a similar list of geography books as part of a reading list for his nature study course in the upper standards, for 1912 (Lamont, 1912. APPENDIX 3.J). Lamont regarded physical geography, especially climatology and geomorphology, as integral components of his nature study courses. His courses were very practical and all examples were drawn from the South African environment. Apart from the specific climatological or geomorphological aspects, his courses also included topics such as the natural regions of South Africa, aspects of transport and economic geography, and the historical geography of South Africa. Such topics were generally dealt with in relation to climatological and geomorphological conditions of the country.

Lamont contributed significantly to the development of geography. He was not only up-to-date with the latest

publications in British geography, but he also always emphasised the modern point of view in his course work and vacation courses. Lamont's vacation courses in geography were mainly for teachers involved in pupil-teacher training and with teaching in the higher standards (The Education Gazette, 1913). He also supported the notion of geography as being concerned with the earth's surface, the climates, products and varieties of life which exist and especially the extent to which human activities are determined by the physical conditions.

The British influence on the status of geography within the South African context, is clear. It is perhaps appropriate, at this point, to be more specific about this influence on the above syllabi. During the last quarter of the previous century the emphasis on the centrality to geography of the society-environment relations, provided the subject with a powerful new direction for growth. Initiated by the Royal Geographical Association and promoted by individuals such as J Scott Keltie, Sir Halford Mackinder and A J Herbertson, the revival of British geography led to the establishment of the Geographical Association in 1893, and with Herbertson the Secretary, to the publication in 1901, of the Geography Teacher. Both Mackinder and Herbertson spent much of their work and time on developing and promoting school geography. They are regarded as the founders of two major features of subsequent geographical enquiry in the English speaking world, namely, the unity of the society-environment relationship, and the region as a framework for study. The "society" and the "environment" were, however,

never afforded equal status in the "unity" they sought. While Mackinder realised the importance of political (human) geography, the physical was always emphasised at the expense of the social. Herbertson was the more influential of the two and it was the need for a precise and more scientific basis for regional division which led to his most influential contribution to English geography, namely, the idea of the natural region. It was this framework which, when combined with the Darwinism of the time, entrenched in geography teaching the foibles of environmental determinism, the view that human activity is shaped by the physical environment.

The syllabus, as well as the reading list, for the Senior Pupil-Teacher Course, should be seen within the context of the "new" geography debate, initiated by Mackinder in a paper, "On the Scope and Methods of Geography", read to the Royal Geographical Society in 1887. Many of his underlying ideas regarding the "new" geography are found in the introduction to the syllabus. The rapid changes in the method of treating geography was explicitly acknowledged and the new and old geography contrasted with one another:

> "The old point of view which laid stress on mere topography is rapidly being displaced. ... The old type of teaching, treating geography almost wholly as a memory subject, had not much in its methods which appeals to modern ideas. ... In contrast to this, the modern method seeks to present geography in its natural aspect, in its relation to the earth, to refer every aspect to cause and effect, and so to provide a training in reasoning which enables the pupil to think geographically" (The Education Gazette, 1911a, p. 510).

Apart from a concern with relations, the syllabus recognised another principle in Mackinder's "new" geography, namely the unity of the discipline: "Again, from the modern point of view, the old division of Geography into watertight compartments - mathematical, physical, and political - is no longer observed; and these parts are not treated as separate entities, but are considered in their interrelations as parts of complete science." (The Education Gazette, 1911a, p. 510). The above mentioned aspects, namely the study of relations and geography as a unified discipline, are a clear reflection of Mackinder's notion of geography:

> "Mackinder relished the challenge, insisting that instead of being split into a general geography (consisting of lists of facts about countries) and a limited physical geography (taught by geologists), the subject should be a single unified discipline, a 'continuous argument' which embodied the complex reality of the world - a world undivided into academic specialisms. It was the duty of the geographer to build one bridge over the abyss which lay between the natural sciences and the study of humanity. Geography ... studied the interaction of communities and environments, manifested in the character of particular places or regions" (Coones, 1989, p. 18).

Against this background it is possible to understand the working definition which is offered in the preamble to the syllabus: "Geography deals with the surface-relief of the earth, and the influence that relief exercises upon the distribution of other phenomena, and especially upon the life of man" (The Education Gazette, 1911a, p. 510).

An analysis of the syllabus further reveals a strong focus on the "region", both locally and globally. The Herbertsonian influence in this regard, is best illustrated by the concern

with natural regions. It was, for example, expected that "new words" such as tundra, steppe, savanna, prairie, pampas, etc. should be described and explained, and, "Comparisons should be instituted between similar regions that occur in various countries, e.g., the 'mediterranean characteristics of Southern Europe, Northern Africa, the Cape Peninsula, parts of the south coast of Australia, and of the Pacific coast of America..." (The Education Gazette, 1911a, p. 510). A perusal of the reading list reveals that the general and regional geography books were regarded as necessary reading material for either the teacher or the pupil. Mort's A Regional Geography for Intermediate Classes, was specifically suggested as textbook. Most of the other books were seen as essential reference material for large Training Colleges. Most of the books were available at the Library of School Text-books at the Education Office.

The Education Department did not see its way open to implement the SATA-syllabus, because the teachers were not adequately trained to teach the "new" geography. Instead, it was decided to introduce the "new" geography on the level of the Third Year Senior-Pupil Teachers' Course. However, the basic problem remained unresolved i.e., who were to teach the senior-pupil teachers? Considering, therefore, the need for properly trained geography teachers, the geography enthusiasts, like Hutcheon and Jamieson, with the support of the Education Department and the SATA, had additional reason to request the University Council to incorporate geography for its higher examinations.

In the light of the above it can be argued that the syllabus for the Third Year Senior Pupil's Course, represented a watershed in the development of geography in South Africa. It represented, at least in theory, a very clear divide between the "old" and the "new" geography.

6.5 THE PROSPECTS FOR GEOGRAPHY AS AN ACADEMIC DISCIPLINE

The extent to which the new ideas and methods filtered through to the class room and influenced the quality of geography teaching can, to a certain extent, be gathered from inspectors' reports. In his annual report of 1910 Inspector Anderson recorded "some improvement" in the character of the lessons given in geography by student teachers. However, "In lessons on descriptive geography there were still occasional traces of the old tendency to give mere topographical lists" (The Education Gazette, 1911b, p. 873). This, according to Anderson, could be ascribed to the fact that a treatment of the whole subject of geography on modern lines, according to climatic regions and products is not always met, not even in the lessons given to the pupil-teachers themselves. The inadequate time allotted to the teaching of geography was also regarded as a major problem.

It gradually became apparent that the status of geography within the whole educational system needed to be reconsidered as, "The geography of the P.T.3 Senior Syllabus presents to many teachers and to most pupils quite a new aspect of the subject; and the

difficulty of getting pupil-teachers to adapt themselves to the new method has proved greater than was at first anticipated" (The Education Gazette, 1912, p. 1076).

The 1913 inspectors' reports on progress in the teaching of geography differed substantially. On a more positive note Inspector Young reported that, "A much-needed stimulus has been given to the teaching of Geography ... by the newer methods with which students are now becoming more acquainted in the Training Schools. Instruction in this subject is becoming more practical in aim and at the same time really more educative: it is becoming less bookish and merely informational" (in The Education Gazette, 1914a, p. 284). This view was echoed by Inspector Anderson in his report, "... that there is no doubt that the new P.T.3 Senior course in geography, with the consequent modifications in the earlier years of the course, has led to a more intelligent treatment of lessons in this subject" (in The Education Gazette, 1914b, p. 1170). A less optimistic report was tabled by Inspector Logie who noted that, "Much improvement in the condition of ... Geography teaching is not to be expected until the effects of the new course in [geography] required of Third Year Senior Pupil Teachers begin to be felt in the schools ... most of the teachers [do not have] the breadth of knowledge necessary to teach [geography] properly" (in The Education Gazette, 1914a, p. 284.).

It became abundantly clear that, in order to produce better equipped geography teachers, the subject needed to be offered

at a higher educational level: "it is not without reason and not in vain that the Inspectors look to Training Colleges for the imparting of the desirable and necessary training to persons who will eventually be placed in charge of schools or classes ... " (The Education Gazette, 1914a, p. 284). Geography had therefore reached a point where, in the light of its institutional support, its utilitarian value, its qualities as a "science" and the need for better qualified geography teachers, the University Council could be approached to reconsider its stance on the inclusion of geography for the University's higher examinations.

6.6 PARADIGMS AND THE HISTORY OF PRE- ACADEMIC GEOGRAPHY IN SOUTH AFRICA

To evaluate the information in this chapter, it is perhaps appropriate, at this stage, to relate it to Clark's article on the history of school geography in South Africa. In an invited paper to commemorate 150 years of geography teaching in South Africa, Clark (1989), traced the history of geography as a school subject since 1839. Clark (1989), presented the history as a smooth and unproblematic process, within the framework of Kuhn's model of scientific development. He forced the history of the subject into the following paradigms:

Descriptive Geography, 1839 - 1859
Emergence of Physical Geography, 1859 - 1910
Science of Relationships, 1910 - 1940

Regional Geography, 1940 - 1973

Clark based the appropriateness of the paradigm model on Kuhn's later views on the constitution of a science i.e., "What the members of a scientific community share" (clark 1989, p.46). Clark's conception of the history of school geography in South Africa does not reflect the fact that geography only became an institutionalised discipline, as well as a subject for the matric and junior certificates, during the second half of the second decade of this century (see Chapter7). Although the introduction of the syllabus for the Third Year Senior Pupil-Teachers' Course in 1912, represented a major shift in the thinking about geography, the teaching of the course proved to be problematic, as there were no teachers, adequately trained, to teach the "new" geography. Despite the efforts of certain institutions and individual teachers, geography, judged by inspectors' reports, remained "descriptive" well into the second decade. The first real change occurred during the latter half of the second decade, when the University Council was convinced of the value of and need for geographical knowledge, not only at matric, but also university level.

Clark's "paradigm hunting", obscures the societal context within which geography developed. What Clark identified as paradigm shifts, indicated merely particular phases in the process of colonising geographic thought in South Africa: descriptive geography provided the necessary facts to legitimate the ideology of empire; physical geography was employed to lend some

measure of scientific respectability to an "unwanted" subject; geography as a science of relationships, especially the concern with "climatic control" was fundamental in promoting in a subtle way the ideology of white domination.

6.7 **SUMMARY**

Fundamental to the early history of geography in South Africa, especially since the beginning of this century, are three interrelated aspects: firstly, the endeavour to prove the intellectual value of geography; secondly, the struggle to secure a proper place for geography in the school curriculum; and thirdly, the utilitarian value geography had for the hegemonic group. It has been indicated, as far as the third aspect is concerned, that geography could positively contribute to the ideology of empire, as well as the demands for a more "scientific" education after the war.

This chapter has revealed that geography ought not be treated as an abstract intellectual exercise, an autonomous body of theoretical propositions to be categorised by paradigms, but rather that it has definite conditions and consequences rooted in the society of which it is a part, and to which it is in some measure responsible. Geography in South Africa, was made to comply with the needs of the hegemonic groups. When geography's contribution in this regard had been proved, the University Council was prepared to incorporate geography into the curricula

for its higher examinations. The next chapter traces the specific route, which geography has taken, after having been on the periphery for a very long time, to becoming an institutionalised academic discipline in South Africa.

7. THE INSTITUTIONALISATION OF GEOGRAPHY AS AN ACADEMIC DISCIPLINE

7.1 INTRODUCTION[1]

The history of geography thus far reveals a long period during which geographical ideas and methods of teaching the subject were merely "transplanted" from Britain and passively accepted by the educational authorities in the Cape Colony and elsewhere. It was only after the founding of the South African branch of the Geographical Association in 1905, that geography enthusiasts started to actively debate the role and value of geography within the South African context and argue for the incorporation of geography as a subject for the higher examinations of the University of the Cape of Good Hope (UCGH). They were, however, confronted with various problems: (1) On many occasions an overcrowded curriculum was put forward as an objection towards its inclusion for the higher examinations. (2) Geography was not regarded as a "failing subject" and as such it came to be neglected by teachers and despised by principals. (3) Due to the vastness of the country it was not possible to bring specialist geography teaching within the reach of all pupils with the result

[1]Due to inadequate archival sources many of the dates in this and the next chapters, especially those regarding the appointment of lecturers and the introduction of syllabi, are based on entries in university calenders.

that the rural areas suffered the most. (4) The education authorities had to cope with negative attitudes from the side of the Afrikaner. The Afrikaner regarded geography as a "English" subject. Most of the books were also in English.

By the beginning of the second decade of this century, despite various requests to have geography introduced as a subject for the University's higher examinations, the Council of the University was still not convinced of the academic merits of geography. In South Africa, as in most other countries, and in Britain in particular, geographical education had to fight against prejudice. It was only towards the middle of the second decade that people in South Africa started to see geography not as a mere collection of unrelated facts, but as a systematic science which focuses on cause and effect relationships. It is, therefore, necessary to establish the conditions which finally moved the Council of the University of the Cape of Good Hope to introduce geography as a subject, not only for the certificate and matric, but also for the degree examinations. The purpose of this chapter is, therefore, to locate the origin of academic geography and to trace its development until the establishment of the first chairs in geography. In doing this one runs the risk of chronologising the historical process (it applies also to chapters 8 and 9). However, it is done, not out of any intrinsic or vaguely "antiquarian" concern for the subject's past (see Cloke et al, p. 4), but rather because these chapters provide information necessary to understand the institutionalisation and establishment of geography as an academic discipline in South

Africa. This chapter, as well as those mentioned above, provide factual proof of an academic geography which was literally transplanted from Britain during the early years of this century.

7.2 ACADEMIC GEOGRAPHY: THE VICTORIA COLLEGE CONNECTION

The first concrete steps to have geography recognised as a subject for the university's higher examinations were taken during the early years of the second decade. On the 13th of May, 1912 the Senate dealt with a letter from the chairman of the Students Representative Council at Victoria College requesting it to introduce a course in physiography for theology (admission) students. This request was a reaffirmation of the possible link which the Afrikaner saw between theology and geography.[2] The request brought with it an interesting new dimension for the institutionalisation of geography. Apart from the arguments which existed at the time to have geography institutionalised there was now also the need to formalise the link between theology and physiography (geography) at tertiary level. The matter was referred to the chairman of the Senate, Dr Cillie, who, at that stage, did little about the whole issue. Nine months later, on 19th February 1913, the request was again considered by the Senate and this time referred to the chairman's committee under the chairmanship of Prof Morrison. One month later (17th of March) the Senate was presented with an outline of a course in

[2]The extent to which this request was a manifestation of a teleological world view needs to be further investigated

physiography, as well as the names of the lecturers responsible to teach it:

Physiography : Junior Admissions Students

1. Dr Shand : Meteorology, geography and geology
2. Prof Malherbe : Physics
3. Prof Van der Merwe : Chemistry
4. Prof Morrison : Astronomy

During the same Senate Meeting, Dr Shand, lecturer in the geology department and who had been in the country since the 15th of August 1911, moved that a course in geography rather be offered instead of physiography, which was also in line with the nature and content of the discipline in Britain. This was agreed to and the syllabus, submitted by Dr Shand, was provisionally approved (Victoria College, 1913a):

SYLLABUS OF A PROJECTED

PRELIMINARY COURSE IN GEOGRAPHY

(APPENDIX 4.A)

1. **Theoretical Course:**

Astronomical/ Mathematical Geography
- The Earth as a Planet
- Consequences of Planetary Relations
- Determination of Position and Altitude

Geomorphology
- Surface Features
- The Cycle of Erosion
- Earth Structure
- Useful Rocks and Minerals
- Strand Line Displacements
- Landforms Developed by Folding, Elevation and

Subsidence

Regional Geography
Description of Existing Continents

Meteorology and Climatology

"Relational" Geography
Climate and Topography in Relation to Plant and Animal Life
Climate and Topography in Relation to Man and his Activities

("Ethnography, Bio-geography, Political and Commercial Geography, and the History of Geographical Discovery remain for Later Treatment")

2. **A Practical Course:**

Surveying, map-drawing, section-drawing, interpretation of maps, and meteorological observations to run parallel with the above.

The question regarding the implementation of the theoretical course was referred to the chairman's committee who, in consultation with Dr Shand, had to come up with ways and means of how to do it. Issues surrounding the practical course were referred to a special committee consisting of Dr Shand (Convenor), Prof Blommaert and Prof Goddard. The 120 pounds needed to buy the necessary equipment for the course in geography, could, however, not be provided by the Education Department. Instead, the Department suggested that funds be made available by the departments of zoology, botany and geology (from a 15 000 pounds grant by the Department of Education to these departments).

The course consisted mainly of physical geographical aspects. The only reference to "man", was in its relationship to climate and topography, more specifically, a concern with the geographical factors which affect early civilisations and migrations. This initiated an important new dimension to the development of geography in South Africa, namely, a more overt focus on Ratzel's conception of geography.

At a Senate Meeting on the 12th of May 1913 the chairman reported, "That the Council had approved of the institution at this College of a course in geography, the cost in connection therewith to come out of the 15 000 pounds" (Victoria College, 1913b, p. 254). On the 28th of May a special committee for the "Further Development of the Geography Course" (with Prof Shand as convenor), made several very important recommendations: that, (1) the institution of a course in geography involve the co-operation of the departments of geology, zoology, and history, (2) the course was to commence in the first term of 1914, (3) that the provision made for the teaching of geography be regarded as of a temporary nature only, and that as soon as a proven demand existed for geographical instruction, that demand be met by the appointment of an independent professor or lecturer of geography.

Of particular importance was the total restructuring of the geography course. The course now consisted of physical geography, bio-geography and anthropogeography, and political and economic geography as well as the history of geographical

discovery. The course was taught by academics from other departments: Shand from geology, Goddard from zoology, and Blommaert from history. In the interim, geography had to be taught as follows (APPENDIX 4.B):

1st and 2nd terms - Physical geography, meteorology, climatology and cartography, theoretical and practical course

: **Prof Shand** (3 or 4 hours weekly)

3rd term - Biogeography and anthropogeography, with the elements of ethnography

: **Prof Goddard** (3 hours weekly)

4th term - Political geography (a) in general, (b) of South Africa in detail Economic geography of South Africa or other country. A subject from the history of geographical discovery (for 1914 the discovery of the sea route to India).

: **Prof Blommaert** (3 hours weekly)

Of particular importance in the further development of geography as an academic discipline, was a report to Senate by the Special Committee on Geography, tabled at a Senate meeting on the 9th of June 1913 at which it was "further resolved to recommend that the University authorities be approached with a view to obtaining recognition for geography among the subjects for the Intermediate and BA Examinations. The Committee suggests that geography be added as an alternate science to section (d) of the Intermediate Syllabus, with the proviso that geology and

geography may not be taken together" (Victoria College, 1913c, p. 227). This report was approved by Senate.

The Committee was further of the opinion that on account of its close connection with history and economics on the one hand, and geology and biology upon the other, place should be found for geography in both Literature and the Science courses.

7.3 THE UNIVERSITY OF THE CAPE OF GOOD HOPE (UCGH) AND THE INTRODUCTION OF GEOGRAPHY FOR ITS HIGHER EXAMINATIONS

7.3.1 Geography as a subject for the Junior Certificate

By the time the Victoria College request reached the University, the University itself had initiated a process whereby geography would become a subject for its certificate and matriculation examinations, paving the way for its introduction as a degree subject. Until this time geography had been officially taught during only the first two of the five years of the secondary school course. Increasing pressure on the University to introduce geography for its higher examinations, led it to seriously consider the introduction of geography for its certificate examinations. This was also in line with the specialisation which was gradually becoming a feature of education in South Africa.

At a council meeting on the 4th of November 1912, the following

report by the School Examinations Committee was tabled:

> "that in view of the desirability of furthering the study of geography in the schools, the Council be asked to appoint a committee to consider and report upon the possibility of including it as a subject in the Junior and Senior Certificate and Matriculation Examinations" (UCGH, 1912, p. 142).

The Council responded positively and the request was referred to the following special committee:

> Rev Dr Jenkins (Chairman, School Examination Committee)
> Prof Notcutt
> Mr Whitton
> Mr H J Anderson
> Mr Baxter
> Mr Mason
> Prof Shand

The name of Mr Anderson was later omitted and Baxter, Mason and Shand indicated as assessors. The Special Committee submitted a report on the 30th of June 1913, recommending the introduction of geography as a subject for the certificate and the matriculation examinations. Also included in the report were the syllabi for the various examinations:

MATRICULATION AND CERTIFICATE EXAMINATIONS
(APPENDIX 4.C)

MATRICULATION AND SENIOR CERTIFICATE

1. POLITICAL AND PRACTICAL
   1.1. The Geography of the British Empire, and of the rest of the world in outline

1.2. Practical

2. PHYSICAL
   The earth and the solar system
   The earth's surface
   The atmosphere
   The sea
   The land
   The work of water on land

JUNIOR CERTIFICATE

1. POLITICAL AND PRACTICAL
   1.1. The geography of Africa south of the equator, and of the rest of the world in outline.
   1.2. Practical

2. PHYSICAL
   The earth and the solar system in general
   The earth's surface
   The sea
   The land
   The work of water in its various forms

A striking characteristic of the above syllabi was the fact that they were still cast in the mould of the "old" geography. Teaching about the British Empire was also still regarded as serving a very important need.

The Council resolved that, (1) authority be granted to circulate the draft syllabus among teachers of the subject, with the view to obtaining their suggestions, and (2) the report be referred to the School Examinations Committee for consideration. On the 10th of November 1913, the School Examinations Committee reported on the issues referred to it by the Council regarding the recommendations of the Special Committee on geography. The School Examinations Committee confirmed the recommendations of

the Special Committee but suggested alternative ways to group the various subjects (APPENDIX 4.D). The Examinations Committee was more inclined to have geography classified as a science subject. The report was not adopted by Council and again referred to the Examinations Committee for their consideration of a proposal to combine the subjects of history and geography.

Of particular importance in the above report was the inclusion of the criticisms from "certain" teachers (APPENDIX 4.E). The following teachers responded to the confidential document:

Mother General, Dominican Convent, New Castle
Head Master, Durban High School
Principal, Durban Ladies' College
Principal, Maritzburg Girls' Collegiate School
Head Master, Boys' Government School, Dundee
Head Master, Senior Government School, New Castle
Principal, Training College, Robertson
J Hutcheon, South African College High School, Cape Town
H H Van Rooijen, Bloemfontein
Principal, Public School, Darling
J Lyle, Grey College School, Bloemfontein
Head Master, Boys' Government School, Ladysmith
H D Sutherns

The response of the teachers was generally very favourable. Only one teacher, the Head Master of the Durban High School, felt that geography had no place in the mentioned examinations, except, perhaps, in the Junior Certificate Examination. He felt that "...already sufficient attention has been paid to the wishes of individuals whose theories of education are unproved, and which verge on the suggestions of cranks" (UCGH, 1913d, p. 255).

Two other teachers, the principals of the Durban's Ladies'

College, and the Maritzburg Girls' Collegiate School, could agree with geography as a subject for the certificate examinations, but could see no real need for geography in matric. The principal of the Maritzburg Girls' Collegiate School had, for example, problems with geography as an alternative to history, as she considered history to be of much higher educational value than geography, particularly to girls. Both principals regarded the practicals as too difficult.

Five teachers gave their unconditional support to the recommendations while five others who supported the recommendations, felt that the syllabi could be improved in certain respects. Suggestions included the following: to focus more on natural regions, to focus on the effect of climate on human activity and national character, to study, in addition to the British Empire, also the other countries which colonised South Africa, namely, the Netherlands, Belgium, Germany, and France, and to focus more on local geography.

Hutcheon produced the most comprehensive response[3]. Although very supportive of the University's recommendations, he regarded the syllabi to be inadequate in the sense that they did not reflect the spirit of the "New Geography" in South Africa. He found it necessary to modify the syllabi in accordance with the work he was doing in preparing students for the Scottish Higher Leaving Certificate and university examinations. The following

[3]J Hutcheon started geography as a separate school subject at the South African College School

is a summary of Hutcheon's re-arranged syllabi:

HUTCHEON'S SYLLABUS PROPOSAL
(APPENDIX 4.E)

JUNIOR CERTIFICATE

1. Theory

The geography of the world in outline and of Africa in detail, with the emphasis on the physical, commercial, and political.

The earth as a planet

Representation of the form and features of the world's surface

General knowledge of the great mountain systems, river systems, and coastlines of the countries of the world

Factors affecting climate. The great climatic regions. The belts of vegetation. The distribution of animals and the races of man

Rise and development of the great industries of the world with special reference to those of South Africa

Causes leading to the rise and importance of towns. Commerce. Trade routes on land and sea

2. Practical

SENIOR CERTIFICATE

1. Theory

The geography of the world in general and of the British Empire in detail with special emphasis on the physical, commercial, and political

The earth as part of the solar system

Representation of the form and features of the world's surface

The factors affecting climate

General knowledge of the influence of climate and the environment on plant and animal life, and on man

The conditions necessary for the successful cultivation of certain plants and the rearing of certain animals (with special reference to South Africa)

The distribution of plants, animals, and races of mankind. The natural regions of the world

The growth and development of the industries of the world

Man's reaction to his environment with special reference to South Africa

The distribution of population. The rise and growth of towns. Influence of geographical environment on the development of states

Commerce. The markets of the world. Transport on land and sea. Storage. Trade routes.

2. Practical

Although Hutcheon retained the main themes of the proposed syllabus, his suggestion was clearly within the context of the "new" British geography.

The progress made thus far, was seriously derailed by the recommendations of the Examinations Committee's Report that geography be included as a subject for Junior Certificate, but not for the matriculation and senior certificate examinations (UCGH, 1914b). These recommendations were adopted by Council and the question of a syllabus was referred to the Committee of Studies for admission to the School Examinations Committee. A sub-committee of the Committee of Studies was appointed to consider the draft syllabus in geography and the criticisms of it. The committee consisted of the following persons:

Prof Notcutt
Canon Jenkins
Mr Whitton
Prof Shand
Mr Baxter
Mr Hutcheon

The recommendations of the committee were confirmed at a Council meeting on the 17th of April 1914, and it was resolved that geography be included as a subject (Group III) for the Junior Certificate examination in 1915 (UCGH, 1914b, p. 298). At the same meeting the Examinations Committee tabled the Junior Certificate syllabus (developed by the Committee of Studies, Chairman, Prof Notcutt). The syllabus was adopted (APPENDIX 4.F). James Hutcheon was appointed the first examiner for the Junior Certificate examination in geography with Prof Morrison as moderator for the physical sciences (Physics, chemistry, physical science and geography). The first Junior Certificate Examination, with examination papers compiled in Cambridge (APPENDIX 4.G), drew only 27 candidates (APPENDIX 4.H). There were no failures and the average mark was 54 percent (UCGH, 1916).

7.3.2 **Geography as a subject for the BA Pass Examination**

In the meantime, the question of introducing geography as a degree subject was referred to the Joint Literature and Science Committee. On the 22nd of September 1913 (three months after the Victoria College's request), the Committee submitted their report on the inclusion of geography as a subject for the Intermediate and BA Examinations. It was recommended that, (1) the subject of geography be included amongst the subjects for the BA degree. A syllabus was devised, strikingly similar to

the Shand syllabi at Victoria College (APPENDIX 4.I), (2) the present Intermediate course in geology serve as an introduction to the BA course in geography as well as to that in geology. The syllabus was referred to the Examination Committee for their consideration while the rest of the recommendations were adopted by the Council (UCGH, 1913b).

Concerning geography as a subject for degree purposes, the Examination Committee reported as follows on the 10th of November 1913: (1) that in the Pass Examination it be included among the science subjects (2) that the committee be empowered to arrange for the preparation of detailed recommendations and syllabi on the foregoing basis (UCGH, 1913c). The recommendations were adopted by Council and the preparation of the syllabi was entrusted to the following sub-committee (UCGH, 1913):

Prof Beattie
Prof Morrison
Prof Goddard
Prof Shand
Prof E A Walters
Prof G Young
Mr J Hutcheon

At this meeting Prof Notcutt (Chairman, Committee of Studies) also submitted a report regarding geography as a subject for degree purposes. It was recommended that geography be a subject for the BA Pass Examination in and after 1916 with the proviso that no candidate shall be allowed to take geography unless he has passed in geology at the Intermediate Examination at least

one year before his BA Examination. Apart from a minor adjustment, the recommendations as well as the syllabus were adopted in full (APPENDIX 4.J)[4]:

FIRST SYLLABUS FOR THE BA PASS EXAMINATION OF THE UNIVERSITY OF THE CAPE OF GOOD HOPE

First Paper

Astronomic basis of geography
Meteorology
Climatology
Physiography

Second Paper

Biogeography
Anthropogeography and Ethnology
Social and economic conditions and their dependence upon the physiographic environment
Political and commercial geography of a selected area
History of geographical discovery in outline

Practical Examination

Geography was the twentieth discipline to be offered for the BA pass examination in 1916, and geography candidates could present themselves for three out of the four subject groups (APPENDIX 4.K). In 1919 UNISA was organised into various faculties which resulted in geography being offered in both the arts and the science faculties. In the arts faculty geography was one of eleven major subjects in which three qualifying courses could be taken (UNISA, 1919). Students who majored in geography had to do at least one qualifying course in one of the following subjects: history, mathematics, physics, botany, zoology. It is interesting to note that students who majored in economics had

[4]The syllabus was in line with what was current practice in Britain (See chapter 9)

to do a qualifying course in either history or economic geography. In the science faculty, geography was one of nine major subjects. Students who took geography as a major subject in the science faculty had to do at least one qualifying course in one of the following subjects: mathematics, physics, botany, zoology (UNISA, 1919).

The Committee of Studies also recommended that geography be introduced as an Honours subject in and after 1917. The preparation of alternative Honours syllabi has been referred to the following sub-committees (UCGH, 1914b):

Literature sub-committee	**Science Sub-committee**
Prof E. A. Walker (convenor)	Prof Shand (convenor)
Prof Fouche	Prof Goddard
Mr Hutcheon	Prof Young

However, both sub-committees could not see their way clear to develop a Honours syllabus for geography (UCGH, 1914a). The Literature sub-committee reported that it was of the opinion that no such course should be attempted for the following reasons: (1) To create an adequate Honours Course in this discipline, it would be necessary to duplicate much of the work being done in the Honours History and Economic Courses. It would be better for students to take one (or both) of these courses as a continuation of the Pass Geography Course. (2) The Pass Geography Course was itself in the experimental stage and it seemed to them inadvisable to draw up an Honours scheme until it had proved itself in practice. The Science sub-committee

reported that it was also of the opinion that it was inadvisable to attempt to draw up an Honours syllabus until some experience had been gained in the working of the Pass syllabus. The recommendation was finally confirmed by Council at a meeting held in Bloemfontein on the 25th of June 1914.

The decision to commence with geography in 1916 was, apparently, in anticipation of the students who registered for the first course in geography at the Victoria College. As matric was still regarded as a prerequisite for university study, geography was still in a severely disadvantaged position. However, the recognition of geography as a university subject, made the struggle for its introduction as a subject for the Senior and Matric Examinations so much easier.

7.3.3 Geography as a subject for the senior and matriculation examinations

On the 23rd of April 1917, Mr Whitton, on behalf of the School Examination Committee, submitted a report in which the Council was urgently requested to introduce geography as a subject for the Senior and Matriculation Examinations:

> "The educational value and general usefulness of the subject of Geography, as understood at the present time, is so well known that the Committee does not think it necessary to enlarge on these phases of the question.
>
> The Committee, however, wishes to draw the attention of the University Council to the unsatisfactory treatment of this very important subject in the

regulations for the various examinations, and most strongly desires to recommend that this be rectified as early as possible by the inclusion of this subject in the Matriculation and Senior Certificate Examinations" (UCGH, 1917, p. 159).

The recommendation was referred to the Committee of Studies for its consideration and to report on the best way of introducing the subject into the scheme of the Senior Certificate and the Matric Examinations.

At a special meeting of Council on the 15th of March, 1918 the Committee of Studies (under the chairmanship of Prof Ritchie) reported that it had considered the syllabus in geography for matriculation referred to it by the council and recommended the adoption of the syllabus:

SYLLABUS IN GEOGRAPHY FOR MATRICULATION EXAMINATION
(APPENDIX 4.L)

THEORY

A. 1. The earth as a part of the solar system.
2. Distribution of land and water.
3. Climatology.
General knowledge of the distribution of vegetable and animal life : natural regions.
4. The races of mankind and their chief characteristics; distribution of population; human activities and their relation to geographical environment.
Commercial products and the conditions affecting their production and distribution.

(Candidates will be expected to make a practical study of their own districts in relation with the various points dealt with above).

B. 1. A general knowledge of the geography of the various continents.
2. The geography of Africa south of the Zambesi in detail

PRACTICAL

The syllabus reflects the teachers' suggestions of 1913, and particularly those made by Hutcheon. Of special significance is the omission of courses on the British Empire.

7.4 THE STATUS OF GEOGRAPHY AT TERTIARY EDUCATIONAL INSTITUTIONS BEFORE THE PROCLAMATION OF UNIVERSITIES IN 1916 (ACTS 12, 13 AND 14) AND THE IMPLEMENTATION OF THE ACTS IN 1918.

Geography was offered at three tertiary educational institutions before the implementation of the University Acts in 1918. The introduction of geography at the **Victoria College** has been dealt with in an earlier section. Scientific geography was offered at this College as a course of instruction for the first time in 1914, despite the fact that it was at that time not yet recognised by the University as a qualifying subject for graduation. It was also offered as a subject for the Teachers' First Class Certificate in 1914 and it was hoped that it would also be of interest to others, "as constituting an essential part of a good general education" (Victoria College, 1914).

There was no intermediate course in geography. The Calender of 1915 indicated that the intermediate course in geology was

regarded as a suitable introduction to the study of geography. Students who wished to take geography as a BA subject had to pass the Intermediate examination in geology.

Instruction in geography was divided into two phases: (1) a Junior Class for junior BA and Teacher Certificate students (see APPENDIX 4.B), and (2) a Senior Class for senior BA students. The syllabus for the Senior Class was as follows:

> Astronomical Geography and Surveying (Theory and Practice)
>
> **Prof Morrison**
>
> Political and Commercial Geography of a selected area
>
> **Prof Blommaert**
>
> Anthropogeography and Ethnology
>
> **Prof Goddard**
>
> Other branches as may be prescribed

A striking characteristic of this syllabus was the absence of courses in geomorphology and climatology. Mr E T Stegman took over from Prof Morrison in 1917 to teach the courses in astronomical geography. The Year Book of 1917 also indicated the prescribed literature:

> Salisbury, Barrows and Tower: Elements of Geography
>
> Bartholomew: Advanced Atlas for South African Schools

The groundwork for geography at the **Rhodes University College** was done long before it became an autonomous discipline at the

College in 1937. In the Year Book of 1915, it was already announced that geography would be a subject for the BA Pass Examination in and after 1916. The announcement at this stage was clearly in anticipation of the introduction of geography as a subject for the BA Pass Examination by the University of the Cape of Good Hope. Although geography appears in the Year Book of 1916, no syllabus is included and no indication is given of lecturers responsible for teaching the subject. In 1917, geography could be taken in the departments of geology, physics and history (Rhodes University, 1917). However, geography was only mentioned in the geology syllabus. By the end of 1917 there was still no indication of lecturers who would have the specific task of teaching geography.

Because of the restricted scope of the **South African School of Mines and Technology**, namely to teach only science, technology and later commerce, the citizens of Johannesburg decided, at a public meeting on March 1916, to take steps to persuade the authorities to also provide courses in arts and medicine. The Council of the School of Mines and Technology responded positively and towards the end of 1916 the Council made several appointments to develop and carry on the necessary courses. Geography was one of the new courses introduced, and J Hutcheon, then lecturer in the Department of Economics, was given the responsibility for the geography course in 1917. Hutcheon was ideally suited for this position due to his lively interest in geography as a discipline.

The introduction of geography at the South African School of Mines and Technology coincided with a demand by the Institute of Civil Engineers in London: "The Institute of Civil Engineers, London, recognises the First Year Preliminary Engineering Examination as equivalent to the Studentship Examination of the Institute, provided that candidates attend courses and satisfy the examiners in English, history and geography, French or German, in addition to the ordinary first year science subjects" (South African School of Mines, 1918). Civil Engineers, therefore, needed a course in geography in order to further their studies at British universities.

Although Hutcheon started the geography course in 1917 (WITS, 1920, pp. 14-15), no evidence of a syllabus could be found.

7.5 UNIVERSITY REFORM IN SOUTH AFRICA AND THE STATUS OF GEOGRAPHY AS AN ACADEMIC DISCIPLINE

University education in South Africa originated in 1858 with the establishment of the Board of Public Examiners. This developed into the University of the Cape of Good Hope, incorporated in 1873, and was merely an examining body. Teaching above matriculation level was, however, done at various colleges, some of which developed into university colleges.

7.5.1 The establishment of new universities and university colleges

After Union in 1910, the establishment of a national university became a hotly debated issue and the authorities were under pressure to reform the tertiary educational system. This resulted in three Acts being passed by the Union Parliament in 1916 which reconstructed the whole university system in South Africa. Acts Nos. 13 and 14 of 1916, granted autonomous status to the South African College (which became the University of Cape Town) and Victoria College (which became the University of Stellenbosch) - two of the eight colleges which had prepared students for the University of the Cape of Good Hope.

Under Act No. 12 of 1916, the six remaining colleges were incorporated into a federal examining university, entitled the University of South Africa. These colleges were as follows:

- Grey University College, Bloemfontein
- Huguenot University College, Wellington
- Natal University College, Pietermaritzburg
- Rhodes University College, Grahamstown
- Transvaal University College, Pretoria
- South African School of Mines and Technology, Johannesburg

The Potchefstroom University College was made a Constituent College of the University of South Africa in 1921, while the

Huguenot University College ceased to exist as a university institution in 1950.

The development of universities in South Africa cannot be divorced from the nature of the society in which they developed. Language, religion and colour or race, played a very important role in the kind of university which developed. Groenewald (1984), in a detailed analysis of relevant literature, identified two concepts which could be employed in an analysis of the university system in South Africa, namely: universalism and particularism. Universalism refers to, "... 'n primêre fokus op nie-spesifieke veranderlikes waarin die algemene aard en dienskarakter van die universiteit in belang van die bevordering van wetenskap en kuns beklemtoon word" (Groenewald, 1984, p. 100). Particularism, on the other hand, refers to, "... 'n meer spesifieke fokus wat die universiteit sou hê in belang van die bevordering van die belange van besondere groepe of kategoriëe" (Groenewald, 1984, p.100). Groenewald regards these concepts not as mutually exclusive, but rather as representing the poles of a continuum:

> "Binne die Suid-Afrikaanse situasie, waarin skerp verdelings van taal en kultuur aangetref word, blyk 'n sodanige konseptuele skema 'n bruikbare instrument te wees om die opkoms en ontwikkeling van universiteitswese aan te dui. Sodoende sou aangedui kan word in welke mate, en met welke kwalifikasie die bevordering van wetenskap ten grondslag van hierdie proses en die instelling en vestiging van bepaalde universiteite gelê het" (Groenewald, 1984, p. 100).

Generally, universities in South Africa tended to be more particularistic to the extent that there was a clear

distinction between English and Afrikaans medium universities. Although the English medium universities (Universities of Cape Town, Rhodes, Natal and Witwatersrand) could, in many ways be regarded as having a more "open" attitude towards issues such as language and race, they most definitely served the needs of the English community to a far greater extent. The Afrikaans medium universities (Stellenbosch, Pretoria, Orange Free State, Potchefstroom) were clearly more "volksgebonde". Afrikaans, as a medium of instruction was actively promoted while people of colour were barred from enroling at any of the Afrikaans universities. The Afrikaans medium universities were committed to, "... die daarstelling van inrigtings wat in terme van kleur eksklusivisties moes dien as heimat waarin die volle ontplooiing van Afrikanernasionalisme, geskoei op die lees van christelik-nasionale onderwys, tot verwerkliking sou kom" (Groenewald, 1984, p. 148).

Since their establishment, the Afrikaans medium universities were actively engaged in ridding themselves of English domination and influence. They were very successful in this regard and according to Thompson, "The Afrikaans-medium universities were the first in sub-Saharan Africa to be fully decolonised. That was a notable achievement. For this purpose, they emphasised particularism at the expense of universality..." (in Groenewald, 1984, p. 148).

In contrast to the above mentioned universities, the University of South Africa, being a federal examining body, was consciously

striving for neutrality, at least as far as language and religion were concerned. However, most of the lecturers employed by the University during the early years were Afrikaans speaking (Boucher, 1973). This state of affairs, according to Boucher (1973), could be explained by the greater degree of bilingualism among the Afrikaners, the hostility towards the new method of university teaching among English-speaking graduates, and the generally larger number of Afrikaans-speaking candidates.

7.5.2 **The first chairs in geography**

Chairs in geography were not created immediately after the discipline's institutionalisation. The first chair in geography was instituted at the University of Stellenbosch in 1920, followed by a chair at the University of the Witwatersrand five years later, in 1926. The chairs were, in both instances, occupied by professional geographers from overseas. They were appointed at universities where the groundwork for academic geography had already been done.

7.5.2.1 **The University of Stellenbosch: Prof P Serton**

Shand's idea that a professor or lecturer be appointed once geography could prove itself to be a viable academic discipline, was echoed by the Council of the newly established University of Stellenbosch in 1918. Geography was one of the first chairs

requested by the University Council, and its establishment in 1920 was widely acclaimed (Thom et al, 1966; US, 1920).

P Serton, a graduate from the University of Utrecht in the Netherlands, was appointed as professor of geography in July 1920. His appointment as professor came only six months after he graduated with a doctorate from the above mentioned university. Having been one of only two students who graduated with a doctorate from a Dutch university at the time, made him the most suitable candidate for the professorship in geography at an Afrikaans oriented university in South Africa.

Serton arrived in South Africa a relatively young and inexperienced academic. He found himself, however, in a situation where he had to establish a new geography department at a university committed to the cause of the Afrikaner. It therefore fell to him to lay the foundation for an Afrikaner oriented geography in a country where an anglicised geographic tradition prevailed.

7.5.2.2 The University of the Witwatersrand: Prof J H Wellington

The geography which Hutcheon (1888 - 1921) introduced at the School of Mines and Technology was primarily concerned with economic and commercial geography, and was mainly intended to serve the needs of other departments. After Hutcheon's death, J

H Wellington (1892 - 1981), a graduate from the Universities of London and Cambridge, was appointed to the post of senior lecturer in the department of geography in 1921, at the then University College of Johannesburg.

Wellington came to South Africa shortly after having been awarded the first class pass in Parts I and II of the Cambridge Geographical Tripos. His research interest was in the field of physical geography, particularly geomorphology. Wellington studied under Philip Lake and is also described as one of his disciples (Baker, 1984).

Geography at the University of the Witwatersrand was, therefore, set to change significantly. Wellington is regarded as one of the scholars, together with J A Steers and G Manley, who contributed largely to the improvement in the image and quality of geography at the University of Cambridge (Stoddart, 1986). This ought to be understood against the background of the fact that geography at Cambridge was never regarded as being on par with Oxford geography. The fact that Wellington was highly regarded as a student of geography is born out by the fact that he was elected a fellow of the Royal Geography Society on 21 February 1921. In a country where geography was dominated by the Oxford tradition, Wellington's appointment added an interesting new dimension to the further development of geography in South Africa. Five years after his appointment as senior lecturer, he was promoted to the first chair in geography at the University of the Witwatersrand in 1926.

It is clear from the discussion thusfar that the establishment of geography as an academic discipline was far more complex than Fuggle (1971) has made it out to be. Fuggle maintains that three events in 1917 mark the establishment of geography as an academic discipline in South Africa: (1) the recognition of geography as a subject for the BA examination, (2) the establishment of the South African Geographical Journal, and (3) the foundation of the South African Geographical Society. This does, however, not reflect the true nature of the institutionalisation process. It is not only wrong on facts, but it is also clearly biased in favour of The University of the Witwatersrand. The idea is created that academic geography in South Africa originated at The University of the Witwatersrand with the appointment of Hutcheon. The important role of Shand at the Victoria College is nowhere considered.

7.6 **SUMMARY**

The institutionalisation of geography as an academic discipline was the culmination of a long process in which a few individuals, with the support of the Cape Education Department and the S.A.T.A., took it upon themselves to prove the value of and the need for geographical education in South Africa. With the University Council still not prepared to introduce geography as a subject for its higher examinations, the Senate of the Victoria College introduced it as a course of instruction in

1914. A request by the Senate of the Victoria College, to have geography recognised as a subject for the BA degree was seriously considered by the University Council. The urgency accorded to the matter is reflected in the fact that geography was officially recognised as a subject for the BA Pass Examination, even before it was introduced as a subject for the matriculation examination.

While Hutcheon remained one of the main protagonists of the "new" geography in South Africa, Shand, at the Victoria College, emerged as a key figure in developing geography on academic lines. The syllabus he introduced at the Victoria College provided the framework for the syllabus later adopted by the University Council.

Academic geography originated in South Africa, very well embedded in the geographic determinist mould of the British tradition. Physical geography (geomorphology), anthropogeography, biogeography and commercial/ economic geography, became the foci of the syllabuses that were developed.

The establishment of geography departments and the appointment of Serton at The University of Stellenbosch as the first professor of geography in South Africa, and Wellington at The University of the Witwatersrand during the early twenties, finally gave geography the academic status fought for over many years.

The autonomy and identity of an academic discipline is, however, not guaranteed by the mere fact that it is officially recognised as such. Maintaining the status of an academic discipline depends very much on organisational efficiency, in the form of societies, publication channels, and its general development within the particular community of scholars. The next chapter addresses these issues and concerns itself with the establishment of geography departments, the staffing of departments, the content of academic geography, societal organisation and the establishment of publication channels.

8. THE ESTABLISHMENT OF GEOGRAPHY DEPARTMENTS AND THE EMERGENCE OF A COMMUNITY OF SOUTH AFRICAN GEOGRAPHERS

8.1 INTRODUCTION

Geography was finally recognised as a University discipline, more than 75 years after it had been officially introduced as a school subject in 1839, and 43 years after the establishment of the University of the Cape of Good Hope. The previous chapters have shown that the institutionalisation of geography must be seen in its societal context. The need for geography, first as a school subject and later as an university discipline, was clearly related to the contribution it could make to the needs of society. It was at first seen as a subject which could be used to further the aims of British hegemonic control. As science education became more important in an evolving South African society, geography gradually justified its demand for university status in the light of the "scientific" explanations it could offer regarding man-environment relationships. Environmental determinism provided a convenient analytical framework for understanding social reality in South Africa. What is important now, is the process by which geography established itself as an academic discipline at South African universities. The analysis, however, will be limited to the universities which originated as autonomous universities or constituent colleges of the UNISA

after the proclamation of universities in 1916. Geography had eventually been introduced at all the institutions which had been proclaimed universities or university colleges in 1916, except at the Huguenot University College. Students, in both the arts and science faculties at this institution could present themselves for examinations in geography since 1923. However, it was not a field of study in which instruction had been given. Students had to enrol for geography at UNISA.

The history of geography, according to Granö (1981), ought to be an analysis, over time, of the relationship between geographers, geographical research, and the content of geography (see Chapter 3). Thus far, an account has been given of the process which led to the recognition of geography, by the university authorities, as an academic discipline. However, although geography was officially recognised as an institutionalised discipline in 1916, it only gradually established itself as an independent field of study. An understanding of the nature of the discipline, which had been introduced into our university system, therefore, necessitates a knowledge of the geographers who were involved, as well as the teaching content of the discipline. As may be the case in other disciplines, research did not play a determining role in either the institutionalisation of geography or its establishment at the various universities in South Africa. The institutionalisation of geography was not a reward for scientific performance. Its institutionalisation was an act "from above", motivated by expectations related to geography's potential educational value

at school and for the public in general.

This chapter deals with developments within the community of geographers. Geographers are regarded as a sub-community within the community of scientists, which is itself a subset of a wider society (Granö, 1981). The community of geographers is an "institutionalising social group", a context within which individual geographers are socialised and which defines the internal goals of their discipline in the external structures within which they operate (Johnston, 1987).

The establishment of geography as an academic discipline at South African universities is complicated by four inter-related factors: (1) geography did not originate at all universities and university colleges at the same time, (2) geography originated at some universities and university colleges as a discipline taught in conjunction with other disciplines, (3) geography was initially taught, in many instances, by academics who received their professional training within the confines of related disciplines, and (4) most geographers who were initially appointed to positions in geography, received their education in Western Europe. This section is, therefore, an endeavour to identify the main events which, and people who, gave rise to an identifiable community of geographers in South Africa.

8.2 THE ORIGIN OF GEOGRAPHY DEPARTMENTS

8.2.1 The earliest beginnings

Geography was officially instituted as a field of instruction at university level by the University of the Cape of Good Hope in 1916. The Victoria College was the only institution of higher learning which recognised geography as a course for instruction before this time (Table 3). It was introduced at the School of Mines and Technology one year after its introduction at the University of the Cape of Good Hope. Geography at the other institutions appeared only after the 1916 University Acts had been implemented in 1918. The University of Cape Town was the last of the universities under discussion at which geography was introduced as an academic discipline.

TABLE 3: **THE DATE OF ORIGIN OF GEOGRAPHY AS A FIELD OF INSTRUCTION AT TERTIARY EDUCATIONAL INSTITUTIONS**

INSTITUTION	YEAR
Victoria College	1914
University of the Cape of Good Hope	1916
S.A. School of Mines and Technology (SA S M T)	1917
Rhodes University College	1919
Transvaal University College	1920
Natal University College	1921
Grey University College	1921
Potchefstroom University College For Christian Higher Education	1927
University of Cape Town	1936

8.2.2 **Geography and related disciplines**

It will be safe to argue that geography as an academic discipline originated in South Africa with a very strong inclination towards the natural sciences. Although there were initially closer links between economics and geography at the Universities of the Witwatersrand and Pretoria, physical geographers were later appointed to teach the discipline at these institutions. The first syllabus in academic geography in South Africa was drafted by a geologist at the Victoria College and was later exclusively taught by natural scientists. There was also a close link between geology and geography at various other institutions. Geography was combined with geology in single departments at the Universities of Rhodes, Natal, Orange Free State and Potchefstroom (Table 4). In all these instances the departments were chaired by geologists.

TABLE 4: **GEOGRAPHY IN COMBINATION WITH GEOLOGY**

UNIVERSITY	YEAR	HEAD	COMBINATION
US	-	-	
Rhodes	1936-	Schwarz, E H L	Geology/Geography
Wits	-	-	
Natal	1921-	Sayce, R U/ Jehu, R M	Geology/Geography
UOFS	1930-	Von Bonde, W	Geology/Geography
UP	-	-	
PU	1935-	V D Merwe J S	Geology/Geography
UCT	-	-	
Unisa	-	-	

US=University of Stellenbosch; Wits=University of the Witwatersrand; UOFS=University of the Orange Free State; UP= University of Pretoria; PU=Potchefstroom University; UCT=University of Cape Town; Unisa= University of South Africa

8.3 THE TEACHING OF GEOGRAPHY PRIOR TO THE ESTABLISHMENT OF INDEPENDENT GEOGRAPHY DEPARTMENTS

8.3.1 The University of Stellenbosch

The pre-1918 development of geography at the University of Stellenbosch, has already been dealt with in the previous chapter. During the period 1918, the time Victoria College was granted university status, until the appointment of Serton in 1920, geography syllabi had been omitted from the University Calendar. It has been indicated, however, that the various courses in geography were taught within the departments of several related disciplines.

8.3.2 The University of South Africa

Until its reconstitution in 1952, the University of South Africa (UNISA) functioned as the examining body for the various university colleges in SA. Until this time study committees were instituted to handle the concerns of the individual disciplines. Most of the academics on the Committee of Study in Geography, were also actively involved in the teaching of the discipline (Table 4). As an examining body, UNISA was responsible for setting the standard for geography teaching at the various university colleges. The first committee of study in geography was appointed in 1921 (UNISA, 1921) with J Hutcheon as its first

chairperson. The first Afrikaans speaking member of the committee of study, appointed to the position of chairperson, was J S van der Merwe of the Potchefstroom University College for Cristian Higher Education, in 1949. It is interesting to note that three of the four appointments to the committee since the appointment of Van der Merwe, were Afrikaners.

TABLE 5: **ACADEMICS ON THE COMMITTEE OF STUDY IN GEOGRAPHY UNTIL THE RECONSTITUTION OF UNISA IN 1952**

NAME	CH/MAN	PERIOD	YEARS	HEAD	LECTURER
Gamble, EG		1921-22	2		UP
Hutcheon, J	1921	1921-22	2		Wits
Sayce, RU	1923/24	1921-29	9		Natal;UP
Schwarz, EHL		1921-28	8		Rhodes
Morgan, CD		1922-23/24	2	-	-
Von Bonde, W		1923/24-51	29	UOFS	-
Plummer, FE		1923/24-31	9	UP	
Du Plessis, DJ		1928-29	2	-	-
Jehu, RM	1932	1929-49	21	Natal	-
Mountain, ED		1930-41	12		Rhodes
V d Merwe, JB	1949	1935-51	17	PU	
Grobbelaar, ASJ		1939-51	13	-	-
Rennie, JV		1940-51	12	Rhodes	
Maritz, S		1941-48	8	-	-
Smit, CB		1947-51	5	-	-

For two years prior to the establishment of the Committee of Study in Geography, the interests of the discipline were seen to by internal examiners (Table 6). E H L Schwarz was responsible for geography at Rhodes and Hutcheon at the South African School of Mines and Technology. A particularly important development for geography was the unanimous recommendation by the Committee of Studies in 1919 that geography as a major science subject be

made a three year course instead of one covering two years,

TABLE 6: **INTERNAL EXAMINERS : 1919 - 1922***

Univ.Col.	1919	1920	1921	1922
Rhodes	Schwarz	Ford/Sellon	Schwarz	Schwarz
SA S M T	Hutcheon	Hutcheon	-	-
Tvl	-	Vaughan,A.W	Gamble,E	Morgan,L
Natal	-	-	Sayce	Sayce
Grey	-	-	-	von Bonde
Potch	-	-	-	-

* Minutes of Council Meetings: July 1919, 1920, 1921, 1922

preceded by a one year's course in geology (UCGH, 1919). It was also recommended that Prof A Young be appointed external examiner for science students in geography. Geography as a fully-fledged science subject should, however, also be seen in relation to a new system of faculties introduced at Unisa in 1919. Since 1919 therefore, geography was offered in both the arts and science faculties.

8.3.3 **Rhodes University**

The establishment of geography as a course of instruction at Rhodes University was greatly encouraged by the Cape Education Department, as it realised the need for the training of teachers in the discipline (Allanson, 1989). Although the University Calender of 1916 stated that the geography curricula at UNISA

would be followed, no mention was made of any particular person to teach the discipline. The earliest indication of geography being taught at Rhodes University College, was 1919. Schwarz was then appointed as internal examiner for geography (Table 5). However, in 1922 Schwarz (professor in Geology since 1905) was given the additional responsibility of co-ordinating the teaching of geography. Schwarz, described as a "real geologist" had no academic degree, but gained great distinction as a student of the Royal College of Science (Currey, 1970). He was particularly well known for his "Thirst Land Redemption" scheme. By 1922 a geography curriculum was also included in the University Calender for the first time. Three years later new geography courses for the Higher Diploma and for the B.Com. and B. Econ. degrees were implemented. After the death of Schwarz in 1928 the teaching of geography continued (Fox and Mc I Daniel, 1989). No information could, however, be found on who the lecturers responsible for the teaching of geography were. The status of geography became more formalised in 1936 when the Department of Geology and Geography was established with Profs E D Mountain and J V L Rennie as the first lecturers.

Rennie came to play a very important role in the eventual establishment of a geography department. Being a trained geologist, with a Ph.D. from Cambridge, Rennie was released from his duties in the geology department, enabling him to spend one year at the University of London. He used this opportunity to complete, in one year, a normal two-year course for the academic diploma in Geography (Allanson, 1989). During the first half of

1936, geography was taught by E D Mountain. On his return from London, Rennie assumed responsibility for the teaching of geography during the second semester (Fox and Mc I Daniel, 1989).

8.3.4 **The University of the Witwatersrand**

The geography which Hutcheon (1888 - 1921) introduced at the University of the Witwatersrand in 1917, was primarily concerned with economic and commercial geography, and mainly served the needs of other departments (see Chapter 7). Geography was taught within the Department of Economics, to which Hutcheon was appointed as lecturer, mainly to teach to technology students.

8.3.5 **The University of Natal**

A Department of Geology and Geography was officially established in 1921. While a geology curriculum existed, no reference was made to any geography courses. R U Sayce was the first to be appointed in the Department of Geology and Geography. He came to the College as lecturer in geography and geology from the University College of Wales, Aberystwyth, in January 1921 (Brookes, 1966). This, according to Brookes (1966) had apparently set the tradition that the professor of geography had to be a Welshman, as his successors, R M Jehu (who held the chair until 1962) and Owen Williams, were both Welshmen. Sayce

was succeeded by Jehu in 1929. Since 1932 geography was offered in three faculties, i.e. in the Faculties of Arts, and Science in Pietermaritzburg, and in the Faculty of Commerce in Durban, taught by E S Metcalf. L C King joined Jehu in 1935 and also lectured in both geology and geography. Since 1939 geography was also taught to "non-European" students at Sastri College by N Hobson.

8.3.6 The University of the Orange Free State

A first year geography course, especially for students doing teacher courses, was introduced at the Grey University College in 1921. This followed on a proposal by Dr D F Malherbe, which was adopted by Senate the previous year (UOFS, 1920), that A Francken be asked to teach a one year course in geography. In 1922 W von Bonde, a geologist, was appointed as lecturer in geography. His name was then also added to the list of Heads of Department for 1922 (UOFS, 1922). N Mudd, an applied mathematician, joined the staff in 1923 but left a year later. Von Bonde was then the only lecturer responsible for geography.

A department of Geology and Geography was established in 1930. The 1930 University Calender mentions the teaching of geography at second and third year levels although the curriculum for these courses was available only on application. Since 1931 a separate course in Economic Geography was offered for B.A. students and was extended to include B.Com students the

following year.

While a sub-committee of senate recognised the important place of geography in the schools, it decided, in 1933, not to go ahead with the implementation of Geography II & III (UOFS, 1933), mainly due to a lack of staff. This decision was later reversed and the first second year course introduced in 1936. This, apparently, necessitated the appointment of Maartins (a geologist) and F Fourie (from the department of "Bedryfsleer") in 1938, in order to assist in the teaching of geography. By 1939 geography was also taught at the third year level.

In 1945 all the disciplines at the university were organised into faculties. The Department of Geography and Geology was located in the Faculty of Science while a course in Economic Geography was offered in the Faculty of Law, Commerce and Administration. By this time the lecturers, apart from Prof von Bonde, included B M Le Page (Miss) and B M von Bonde (Miss). A A Schmidt the first professional geographer to be appointed to a lectureship in the department in 1947, was a graduate from the University of Stellenbosch. He was mainly responsible for the teaching of Economic Geography. By 1952 Schmidt was the only lecturer left to teach geography. Geology and Geography separated in 1953 with Schmidt as the acting head of the new Department of Geography.

8.3.7 The University of Pretoria

Geography was introduced as a course of study at the University of Pretoria in 1921. However, a course in economic geography was already taught in the Faculty of Commerce and Public Administration in 1920, by A W Vaughan (Miss) (Hattingh and Horn, 1989). A first year course in geography was introduced in 1921 as part of a three year major for both the B.A. and B.Sc. degrees and was taught by R E Gamble. Sayce succeeded Gamble in 1922 as the first senior lecturer in geography.

8.3.8 Potchefstroom University for Christian Higher Education

There are indications that geography courses were periodically taught at the Potchefstroom University College since 1926. It was, however, officially introduced only in 1935 (Du Plessis, 1975), one year after the establishment of the Potchefstroom University College for Higher Education.

While the Minutes of Senate reveal that the introduction of geography as a course of instruction was discussed since 1924, it was only in 1926 that the College authorities responded positively to a request by students to have a course in economic geography introduced in their curriculum. J V Coetzee, a teacher at the Hoër Gimnasium, had the responsibility for the course, which lasted only for one month, as it was felt that students doing such a course, needed at least a first year course in

geography. The authorities were quite eager to appoint someone to teach geography at first year level. What they had in mind, however, was to appoint a lecturer in economics with a knowledge of geography. They were not successful in this regard and consequently appointed Dr D J du Plessis, lecturer in the Department of Physics, to teach geography. He was temporarily assisted by Coetzee. A first year course was thus officially introduced in 1927.

The establishment of a Department of Geography was seriously considered in 1931 (Du Plessis, 1975). Although the need for such a department was clearly realised, the idea could not be implemented. The Minister of Education was again approached in 1933, this time for the establishment of a Department of Geology and Geography, as there was a great demand for these subjects.

In 1934, J S Van der Merwe, with science degrees from UOFS and Unisa, was appointed as the first temporary full-time lecturer in Geology and Geography. Due to the greater number of students who enrolled for geography in 1935, the temporary lectureship was upgraded to a full-time senior lectureship in geography in 1936. The establishment of a Department of Geography and Geology was, therefore, accomplished and Van der Merwe appointed as senior lecturer and head of the department. It is interesting to note that Van der Merwe was appointed to the Committee of Studies in Geography in 1935. Geography II & III were also added in 1936. Due to an increase in geography students and a greater demand for geology it was decided to promote G Yssel, who worked

as an assistant in the department since 1937, to a lectureship in 1940. During the same year Van der Merwe was promoted to the position of professor (The South African Geographer, 1988/ 1989). Further appointments in 1940 were P B Ackerman as assistant, while J P Duvenhage assisted on a temporary basis. When Yssel resigned during the second half of 1940, Ackerman was promoted to the lectureship with specific responsibilities in geology. Duvenhage replaced Ackerman as assistant in geography. He was promoted to the position of lecturer in 1945.

By 1946, the staffing situation and student enrolment were such that geology and geography could be separated. Van der Merwe remained head of geography while Ackerman became head of geology.

8.4 THE EMERGENCE OF A COMMUNITY OF ACADEMIC GEOGRAPHERS

The first autonomous geography department was established at the University College, Johannesburg, in 1919, three years after it had been officially recognised as an university discipline by the University of the Cape of Good Hope. It was only appropriate that Hutcheon, longtime advocate for the proper place of geography in the educational system of South Africa, be appointed to this position (Table 7). This was followed by the establishment of a department at the first autonomous university in South Africa, namely, the University of Stellenbosch. The first professor of geography in South Africa was also appointed

at this university. The departments at the above institutions were for many years the only autonomous geography departments in the country.

TABLE 7: **FIRST HEADS OF INDEPENDENT GEOGRAPHY DEPARTMENTS**

UNIVERSITY	HEAD	YEAR OF APPOINTMENT
US	Serton, P	1920
Rhodes	Rennie, J V L	1945
Wits	Hutcheon, J	1919
Natal	Jehu, R M	1942
UOFS	Schmidt, A A	1953
UP	Plummer, F E	1930
PU	V d Merwe, J S	1941
UCT	Talbot, W J	1936
Unisa	Smit, C B	1952

The origin and academic background of the first professors in geography reveal a very interesting pattern (Table 8). At

TABLE 8: **THE ORIGIN (PER COUNTRY)/ACADEMIC BACKGROUND OF THE FIRST PROFESSORS IN GEOGRAPHY**

	FOREIGN GEOGR.	NON-GEOGR.	S.A. ED.
US	*		
Rhodes		*	
Wits	*		
Natal	*		
UOFS			*
UP	*		
PU		*	
UCT	*		
Unisa			*

most of the universities these positions were occupied by foreign geographers. At only two departments were South African

geographers the first professors. They were, however, appointed to these positions several years after geography had been established as an autonomous discipline at these universities. At two universities the first professors of geography had not received any formal professional training in geography.

The nature of geography was, therefore, mainly determined by academics who received their professional training either abroad or in related disciplines. Since the 1950s the situation changed somewhat, in the sense that the successors to the first professors received their training as geographers, either partially or fully inside South Africa (Table 9). Those who graduated from universities abroad, came mainly from British

TABLE 9: **FIRST SOUTH AFRICAN EDUCATED GEOGRAPHERS AS HEADS OF DEPARTMENT**

UNIVERSITY	HEAD	PERIOD	UNIV. GRAD.
US	Nel, A	1960-72	Stellenbosch
Rhodes	Forbes, V S	1967-71	Cantab.; Rhodes
Wits	Jackson, S P	1958-68	Rand; London
Natal	Williams, O	1963-82	Wales; Natal
UOFS	Schmidt, A A	1953-67	Stellenbosch
UP	Scheepers, G H	1950-75	S.A.;Pret.;Ham.
PU	Van Brakel	1974-	S.A.
UCT	Davies, R J	1975-	Rhodes; London
Unisa	Smit, C B	1952-61	U.P.

universities. Of those who studied abroad, only one, G H Scheepers (an Afrikaner), completed a higher degree on the continent, namely at the University of Hamburg, West Germany.

Geography was for many years dominated by scholars who were

either specialists in a related natural science or in physical geography. The situation changed dramatically since the 1950s (Table 9). With the emergence of a second generation of professors in geography, human geography became the new focus.

TABLE 10 : **FIRST SOUTH AFRICAN EDUCATED GEOGRAPHERS AS PROFESSORS**

UNIVERSITY	YEAR OF APP.	PROFESSOR	PHYS./HUM
PU	1941	Van Der Merwe, JS	Phys.
UP	1950	Scheepers, G H	Phys.
Wits	1958	Jackson, S P	Phys.
US	1960	Nel, A	Human
UOFS	1962	Schmidt, A A	Human
Unisa	1962	Moolman, J	Human
Natal	1963	Williams, O	Human
Rhodes	1967	Forbes, V S	Phys.
UCT	1975	Davies, R J	Human

By 1962 three of the departments at Afrikaans-speaking universities were chaired by human geographers, all products of the geography department at the University of Stellenbosch. It is perhaps interesting to note that the physical geographers who chaired the departments at the University of Pretoria and Potchefstroom University, were later also succeeded by human geographers. A similar change also occurred at the English-speaking University of Natal. By the mid 1970s geography departments were predominantly chaired by human geographers.

What follows is a more detailed analysis of changes which

occurred within departments at the various universities, since autonomy was granted.

8.4.1 **The University of the Witwatersrand**

In view of his academic background, Wellington concerned himself, right from the beginning, with a systematic study of mainly the physical geography of southern Africa. Through various regional studies, Wellington established an international reputation as an authority on southern Africa (Jackson, 1990). Wellington made his mark as an international academic when he was invited, together with several other distinguished South Africans, to attend the centenary meeting of the British Association in London, in 1931[1]. At this meeting, Wellington read a paper on "Land Utilisation in South Africa". The paper was later published in the Geographical Review. He became known to American geographers and was later invited by Isaiha Bowman, then president of the American Geographical Society, to write a chapter on, "Possibilities of Settlement in Africa" for the Society's report on "Limits of Land Settlement", submitted to the Tenth International Studies Conference, in Paris, 1937.

In a country where geography was dominated by the Oxford tradition, Wellington's appointment added an interesting new

[1] General Smuts was president of the British Association at this time.

dimension to the further development of geography in South Africa. Five years after his appointment as senior lecturer, he was promoted to the first chair in geography at the University of the Witwatersrand, and was initially assisted by P L Bell-John (Miss).

Although Wellington was seemingly an excellent teacher of undergraduate students and especially a keen researcher, he did not, prior to WW II, produce many post graduate students (Murray, 1982). In fact, under Wellington's direction, the department did not really develop into a very large one (Jackson, 1990). One of his first post graduate students, Stanley Jackson, was appointed as lecturer in 1931, the first appointment of a South African educated English-speaking geographer to an academic post. Wellington retired in April 1957. The high regard for Wellington's contribution to the geography of the sub-continent, is underlined by the fact that the University of Cambridge conferred on him the DSc after his retirement.

Jackson was promoted to professor and head of the Department of Geography in 1958, after more than thirty years of geography under Wellington. He was a physical geographer with degrees from Wits and the University of London. When Jackson took over as head of the department, he was not very happy with the way in which the department was developing. He was particularly concerned about the descriptive nature of geography and the lack of explanation and specialisation (Jackson, 1990). He started to

focus on climatology and regarded himself as the person who introduced the quantitative revolution in South Africa (Jackson, 1990).

Jackson joined the Department of Geography during the same year as he received his B.A.-Hons degree, after having held teaching posts with the Transvaal Education Department. After having completed a MA degree (Geography) at Wits in 1937, he enrolled at the Imperial College in London in 1938. He obtained the Diploma (DIC) in Advanced Meteorology. During the following year he joined the Royal Navy as a meteorologist and served in South East Asia as Lieutenant Commander. After the Second World War he obtained his Ph.D. at the University of London. He was then senior lecturer in the Department of Geography at Wits. When Jackson was promoted to professor in 1958, he was the only lecturer in the department. This is an indication of Wellington's commitment to his personal research instead of developing his department. It contrasts strongly with the development of geography at the University of Stellenbosch, for example, where, on the retirement of Serton, there was a strong indigenous component of academic geographers in place.

Since physical geography was the main focus of the department since the appointment of Wellington human geography was never seriously considered as a sub-discipline. The first movement in this direction came with the appointment of Fair as Reader in regional geography in 1965. T J D Fair left the department after a period of two years and was succeeded by P D Tyson (1967), a

physical geographer. The Department was then also joined by G Hart, a human geographer.

8.4.2 **The University of Stellenbosch**

Shand's idea that a professor or lecturer be appointed once geography could prove itself to be a viable academic discipline, was echoed by the Council of the newly established University of Stellenbosch in 1918. Geography was one of the first chairs requested by the University Council and its establishment in 1920 was widely acclaimed.

Serton was appointed at a time when physical and deterministic geography had established itself as the foundation of geographic discourse inside South Africa. Having been largely influenced by the environmental determinist paradigm of early twentieth century English geography, geography in South Africa was merely a replica of the English tradition. Serton was, however, trained as a human geographer within the context of the then newly established Utrecht School of Social Geography in The Netherlands. The question which arises is: How did Serton reconcile his training as a human geographer at the University of Utrecht with geography in South Africa, dominated by an English tradition. In order to answer this question one has to have an understanding of the nature of Dutch geography during the early years of the twentieth century and thus the academic milieu within which Serton received his academic training as a

geographer.

At the time of Serton's appointment academic geography in The Netherlands was clearly in a state of flux. There was no consensus concerning the nature of geography (Heslinga, 1983). Not only did the dualism of physical and human geography became entrenched in the very nature of Dutch geography, but there were also various opinions concerning the nature of human geography. In Amsterdam, Steinmetz developed his own particular notion of geography, namely sociogeography with a strong sociological and socio-cultural focus. In Utrecht, Niermeyer was preparing the ground for a geography which was to reject the German geographic tradition, in particular Ratzel's anthropogeographie. He was more in favour of the French tradition in geography, in particular Vidal de le Blache's "geographie humain" and specifically the concept genre de vie. Niermeyer's conception of geography was more ecological and socio-economical in nature. While Niermeyer was openly opposing the dogmatic geographical perspectives of German geography, namely those which characterised "Kulturgeographie", "Länderkunde", and also "Environmental Determinism" itself, the German influence remained very strong in Dutch Geography, and Niermeyer himself was not entirely free of its impact (Heslinga, 1983).

Apart from his concern with the pedagogical aspects of geography, Niermeyer developed expertise in mainly three fields of geographic endeavour, namely colonial geography, cartography and economic geography. His interest in economic geography

assured his appointment as professor of economic geography at the Handelsch-Hoogeschool in Rotterdam in 1913. He was joined there by Hendrik Blink, as lecturer in capita selecta of economic geography, in the same year. Blink is particularly well known for his contributions to the establishment of the Tijdschrift voor Economische Geographie in 1911, which later became the Tijdschrift voor Economische and Sociale Geographie (TESG). Rotterdam thus became the centre of economic geography during the early years of the twentieth century. It was also here that Serton, under Niermeyer, worked for his Ph.D. in economic geography with a dissertation on: "Rotterdam als Haven voor Massale Goederen" (Serton, 1919). It is within this context that Serton was finally shaped as an academic geographer. He was also the first to obtain a doctorate in geography in The Netherlands, and as an assistant to Niermeyer it is quite understandable that Niermeyer was only too eager to recommend Serton as professor of economic geography at the University of Stellenbosch in 1920 (Heslinga, 1983).

With the appointment of Serton at Stellenbosch, very little of the French tradition in Dutch geography had been transplanted. In fact the syllabus which Serton introduced in 1921, which differed substantially from what was previously taught at the Victoria College, was gradually transformed to reflect more explicitly the German and British traditions. In a Serton Memorial Lecture at the University of Stellenbosch, Nel (1990) reflected on the content of Serton's lectures during the late twenties and early thirties. What Serton taught his students was

largely determined by the work of Germans, such as Richthofen, Hettner, and Ratzel, as well as the work of British geographers like Herbertson, Mackinder, Fawcett, and Baker. Classifications were a very important geographic theme at the time. Climatic, plant, economic, and racial classifications were largely based on the work of English and German geographers. The social context of racial classifications in geography is specifically emphasised by Nel: "So ook is die rasseklassefikasie van Von Eickstedt onderhoudend vir 'n rasbewuste Afrikaanse studentegemeenskap voorgehou aan die hand van 'n gedetailleerde kaart" (Nel, 1990, p. 5).

It is clear that Serton had to conform, academicaly, and that he had to be responsive to the needs of the Afrikaner society. However, Niermeyer's influence did filter through in some respects, in particular as far as environmental determinism and possibilism were concerned. According to Nel: "Ook Ratzel se organiese staatsteorie, aansluitend by Darwin se biologiese evolusieleer, en 'n hoeksteen van die omgewingsdeterminisme konsep, is breedvoerig deur Serton aan studente in die politieke geografie oorgedra, maar sonder veel geesdrif" (Nel, 1990, p. 2). Nel put forward two reasons for the lack of enthusiasm with which Serton taught the work of Ratzel: "(1) die organiese staatsteorie het die hoeksteen geword van Hitler se nasionaal-sosialisme soos gepropageer deur Haushofer, en na 1939 was Serton se vaderland een van die eerste slagoffers daarvan, en (2) die konsep van possibilisme soos ontwikkel deur die Franse skool van Vidal de la Blache (1845 -1918), Febvre en Vallaux het

'n al groter ondersteuning van Serton gekry" (Nel, 1990, p. 2). This explanation does not take Serton's academic background into consideration at all. Serton's reluctance to teach environmental determinist perspectives, an aspect which needs further in depth investigation, ought also to be seen within the context of the parameters set by the academic and socio-political debate of the time, not only in South Africa, but also at the University of Stellenbosch. In view of his academic background, Serton might have been a captive of such a debate, that is, that he did not feel free to develop his own perspectives in geography. This is also reflected in the fact that he had to teach the work of English geographers, which were never at issue during the time he studied in The Netherlands (Heslinga, 1983).

Serton was initially assisted by M Le Roux (Miss), who also lectured in the history department. Geography was, initially, represented in two faculties: Arts and Philosophy, and Education. Six years after the establishment of the geography department, D J Conradie, a student of the department, was appointed as temporary lecturer. When Conradie was appointed as full-time lecturer in 1928, due to a rapid increase in both the number of students and lectures (Thom et al, 1966), Le Roux left the department to teach geography on a full-time basis to students in the education faculty.

Serton and Conradie were the only full-time lecturers in the department until 1940, when J H Moolman, graduate of the department, joined the staff on a permanent basis, as a lecturer

(Nel, 1960). Moolman had assisted in the department on a temporary basis, for various periods of time since 1935 (UNISA, 1960). He assisted, for example, as temporary lecturer in History and Geography in 1935. Moolman left the department in 1948 to take up a position as Director of the Division of Planning in the Natural Resources Development Council, a position he held until 1959. During this period he contributed significantly to research concerning planning and development in South Africa (UNISA, 1960). He also served on various government commissions, among others, the Mentz Commission (1954), Tomlinson Commission (1956) and the Small Holding Commission (1957). Apart from his contributions to academic geography, Moolman is also highly regarded for his contributions to governmental planning, as he was one of "... daardie klein groep van staatsamptenare wat die fondament vir die skouspelagtige ekonomiese groei van die sestigerjare help lê het" (Journal for Geography, 1970, p.682)

The late 1950's turned out to be a significant period for geography at the University of Stellenbosch: (1) An "Afdeling Krygskunde" in the Faculty of Science was established in which military geography was offered as a course of study. The establishment of the "Afdeling Krygskunde" provided new challenges for the teaching of geography. Both Serton (1956-1959) and Nel (1960-1961) served on the Committee for Military Studies which investigated the need and possibility of establishing a "Krygskunde afdeling" at the university. The first lecturers to be appointed to teach "Military Geography"

were D E Nel, H Jansen and W F Senekal (previously appointed as technical assistant in the Department of Geography). They were joined by C J Swanevelder in 1961. After the establishment of the Faculty of "Krygskunde", located in Saldanha, J C Kotze was appointed as head of the new department which offered a degree in Geography (Mil). (2) When Serton retired in 1958 after 38 years of service, Nel was promoted to professor and head of the department. The further development of geography was then firmly in the hands of Afrikaner geographers, all of them graduates of the department. Nel concerned himself with the relationship between academic and educational (school) geography: "In sy persoon het hy die versoener geword tussen die akademiese en die opvoedkundige, die man na wie sowel die onderwyser en die navorser hom met vrymoedigheid wend" (Journal for Geography, 1970, p. 682). Academic geography, he believed, could only be strong if it had a solid basis in schools. This was at a time when geography at Afrikaner Schools was grossly neglected. Nel was one of the first Afrikaner human geographers to be appointed as professor and head of a geography department at a South African University and was a great driving force as far as Afrikaner geography in South Africa was concerned[2]. It was the energy of his leadership that made Stellenbosch such a major formative influence on Afrikaner geography in South Africa.

[2]The genealogy of Afrikaner academic geographers strongly suggests a dominance of Stellenbosch graduates teaching military geography at the University of Stellenbosch. Stellenbosch graduates dominated the department at the Orange Free State and later also at UNISA and the University of Pretoria

A significant appointment was that of W A Nieman in 1966. He was the first non-Stellenbosch graduate that was appointed to a lectureship in the department. Nieman graduated from UNISA and the University of Pretoria. He was appointed in an effort to develop physical geography (climatology) in the department. Because of the department's emphasis on human geography, it had to rely on "imported" physical geographers. Although Shand was partly responsible for laying the foundation for geography in South Africa, he disappeared from the geography scene after the appointment of Serton. One of Shand's students and colleagues, M S Taljaard, later specialised in geomorphology and stratigraphy (Journal for Geography, 1966a). However, nothing could be found to indicate any co-operation between the departments, despite the fact that Taljaard was elected as president of the South African Geographical Society in 1948 which is an indication of his status as an academic within the geographical fraternity at the time. He also hosted the visit of Erich Obst, a German geographer and a high ranking official in the Hitler Administration, in 1930.

W S Barnard became the third professor in the department in 1971. He was promoted to the position of head of department in 1973 to replace Nel who had been elected as full-time dean of the Faculty of Arts and Philosophy. When Barnard took over the staff included the following lecturers: Swanevelder, P G Jooste, Nieman, I J Van der Merwe, G L De Kok, J N Steyn and L Zietsman.

8.4.3 **The University of Pretoria**

F E Plummer succeeded Sayce as acting professor in 1924. He was joined by C F Hugo (a Stellenbosch graduate) in 1926, and together they formed a team for more than twenty years. Hugo and Conradie were the first two Afrikaner geographers to be appointed to university posts.

While Plummer was away on war leave, between 1940 and 1946, Hugo acted as head of the department. To assist him, a former student of the department, G H Scheepers and J H Voster were appointed as temporary lecturers. On the return of Plummer, Scheepers was appointed to a permanent position. With the introduction of a two year course in meteorology in 1949, Scheepers was promoted to senior lecturer. Plummer retired in 1949 and Scheepers took over as head of the department in 1950, despite the longer service of Hugo. Vorster was appointed as third lecturer in 1950. Vorster graduated with a BSc (geography and chemistry) from the University of Potchefstroom in 1942. After three years as an assistant in the Department of Geography at the University of Pretoria, he joined UNISA as lecturer in 1947. He returned to the University of Pretoria as lecturer in 1950, and was promoted to senior lecturer in 1956 (The South African Geographer, 1982a) and lectured in geomorphology and climatology. When Hugo retired at the end of 1963, he was replaced by M P Van Staden who took office in 1964.

Scheepers, an outstanding student, graduated from the University

of Pretoria with a MSc in 1935 and with a B.A. degree from Unisa in 1936. Two years later he received a DSc degree from the University of Hamburg, West Germany (Du Toit Spies and Heydenrych, 1982). Until the appointment of Smit the department was characterised by severe personal conflict, which undoubtedly influenced the development of the discipline at this university.

An interesting development as far as geography at the University of Pretoria was concerned, was the separation of physical and social geography. The University Calender of 1940 indicated "Geography" as two departments: Physical Geography and Cartography, with Plummer as head, and Social and Regional Geography, with Hugo as head. These sections were, however, again combined in 1946. Meteorology became very prominent towards the end of the 1940s, and the department's name changed to the Department of Geography and Meteorology with Scheepers responsible for meteorology.

8.4.4 **The University of Cape Town**

W J Talbot was appointed as professor and head of the Department in 1936. Talbot graduated from the University of London in 1928 with a BSc-Hons degree. He studied geography under L W Lyde, C D Forde and Margeret Schackleton, and geology under E J Garwood (Journal for Geography, 1966b). After having lectured under Alexander Stevens at the University of Glasgow for a period of three years, Talbot undertook extensive research at the

University of California under C O Sauer and the Historian H E Balton. He returned to his previous position at the University of Glasgow in 1935. At the time Talbot was the first professor of geography in South Africa with extensive research experience in the United States of America. The nature of the geography he introduced at UCT was clearly a reflection of this experience. Marshall, initially appointed as demonstrator in 1941, was later (1944) promoted to lecturer. After 1944 several foreign appointments were made for short periods. A second UCT graduate, L L Impey, was appointed to the department in 1957. When Talbot retired in 1975, he left a strong and dynamic department. The academic staff at that time included M Marshall, K S O Beavon, N Dewar, F L Ferrario and Impey.

8.4.5 **Rhodes University**

Geography became an autonomous discipline under the chairmanship of Rennie, in 1937. After 1939 he was assisted by A Ruddock who lectured in both geology and geography. Rennie was promoted to the position of professor in 1944. Five years after the establishment of the Department of Geography, V Forbes, a close friend of Rennie from their student years at Rondebosch Boys' High School in Cape Town (Fox and Mc I Daniel, 1989), joined the department as the second full-time lecturer. When Rennie eventually resigned from his position in geography in 1966 (in view of his position as the first full-time Vice-Principal) Forbes was promoted to professor and head of the department.

Forbes had completed a first class degree in the geography tripos at Cambridge University in 1929. He later also studied geology and petroleum technology at Berkeley and mineralogy at UCT.

The staffing of the department remained the same until Ruddock's departure in 1961. After 1962 geography was also offered in Port Elizabeth under the caretaking role of Rhodes University. Forbes occupied the position as head of the department for only four years during which time only one lecturer, G Cook (Miss), was appointed.

8.4.6 **The University of Natal**

The foundation of geography as an independent discipline at the University of Natal was laid during Prof J W Bew's office as Principal (1928 - 1938). During this time seven new departments were created, amongst them, geography, which had been separated from geology. Three new senior lectureships were also brought into being, one in geography (Brookes, 1966). Jehu was appointed to the professorship in geography in 1941. A year later he was joined by Metcalf, a part-time lecturer, responsible for economic geography in Durban. Two full-time lecturers were appointed under the chairmanship of Jehu before the establishment of the University of Natal as an autonomous institution. Jehu remained head of the department in Pietermaritzburg, assisted by N Niddrie. Fair was appointed as

lecturer at the Durban Campus in 1949. Other appointments made before Jehu's retirement in 1952 include the following: in Pietermaritzburg, O Williams, P M Hobson (Miss), Tyson and B S Young; in Durban, R J Davies, J B Daniel and H C Brookfield. Williams was appointed as head of the department in 1963 after almost 20 years of geography under Jehu. By the time he was promoted to this position, he was already teaching in the department for twelve years. Williams, born and educated in Wales, was a graduate from the Department of Geography and Anthropology at the University College of Wales, Aberystwyth (The South African Geographer, 1982b, p. 104). He later graduated with a Ph.D. from the University of Natal. On Williams's assumption of office the lecturers in the department included: Davies, Daniel, Young and Tyson. After the establishment of the Durban campus of the University of Natal, geography developed into an autonomous department there. The Durban campus was finally separated from Pietermaritzburg in 1973. Williams remained the head in Pietermaritzburg, assisted by O S McGee and R E Schulze. Davies became the head of the Department of Geography at the Durban Campus with R A Preston-Whyte, Young, and G B Slade as the staff members.

8.4.7 **Potchefstroom University for C.H.E.**

P Verhoef was the first permanent appointment following the establishment of the independent geography department. Soil geography had become a very popular subdiscipline in the

department. This contributed to Verhoef's decision in 1960 to further his studies in geomorphology and soil geography in the Netherlands. On the completion of his Ph.D. in 1966 he returned to the department. Very eager to introduce new ideas, Verhoef soon found himself in a situation of unbearable conflict. This was aggravated by his changed views on religion and politics. As a result, Verhoef resigned his position in 1967. In the same year W J Voordewind, still busy with his Ph.D. and in the department since 1961, was promoted to senior lecturer. Voordewind started his career as a mine geologist, but entered the teaching profession in 1952 (The South African Geographer, 1987/88a).

F J Potgieter was appointed as senior lecturer in 1965 after the death of Duvenhage the previous year. He was involved in the establishment of a Department of Planning and the development of undergraduate courses in this field. This also led to the establishment of a Department of Geography and Regional Planning in 1969. Soil geography remained important and was mainly taught by part-time staff. A B de Villiers was later appointed as junior lecturer in order to assist in this field.

After Van der Merwe's retirement in 1973, Voordewind acted as head until J P van Brakel, who was lecturer in the department since 1968, was appointed professor of geography. During the early seventies several graduates from other universities, for example, A Nieuwoudt (Stellenbosch) H P van der Westhuizen (Pretoria) and E van Loggerenberg (Potchefstroom and Port

Elizabeth) were appointed to positions in the department.

8.4.8 **The University of South Africa**

The department of Geography and Economic Geography was established after UNISA had been reconstituted in 1952. The first lecturers were C B Smit (head) and R D Tromp, both graduates from the University of Pretoria. Smit was also a Member of the Committee of Study in Geography since 1947, and one of the first lecturers to be appointed at Unisa. He was previously on the Staff of the Pretoria Technical College. This, together with the fact that the principal of the College, J P Duming, was a supporter of the new university venture (Boucher, 1973) may have positively influenced Smit's appointment at the time. The staffing situation remained unchanged until 1st December 1959 when Moolman was appointed to the vacant chair in geography. Prior to his appointment as Prof Moolman visited Europe in 1956, in connection with the construction of an international population map of Africa. During 1958 and 1959 Moolman visited America with a Eisenhower Exchange Fellowship in order to learn more about the American way of life. This international exposure together with his stature as researcher and previous involvement in important government agencies made of him an ideal candidate for the professorship at Unisa. He remained interested in planning issues, in particular issues regarding Bantustan development (Nel, 1960). He was a respected academic and is eloquently described as, "... die stem van die

Afrikaner gewete, reguit, eerlik, vreesloos onafhanklik. Sulke manne verryk aardrykskunde nie net met hul werk nie, maar ook met hul persoonlikheid" (The Journal of Geography, 1970, p. 682).

Other staff members apart from Smit and Tromp as senior lecturers, included Nieman and J N Scheepers. They were later joined by D E Nel and M J Louw.

8.4.9 **The University of the Orange Free State**

A A Schmidt acted as head of the Department of Geography from 1953. He was promoted to the position of professor and head in 1962. While Schmidt was acting head, he was joined by J A Coetzee (1954), J A van Zyl (1959), and since his promotion to professor, by Jooste (1962) and Senekal (1964), all graduates from the University of Stellenbosch. Van Zyl left the department in 1960 to take up the position as head of geography at the University of the Western Cape, while Coetzee became professor of geography at the newly established University of Port Elizabeth in 1965 (The South African Geographer, 1988b).

During the sixties, J S Le Roux and W J Du Toit, both science (physical geography) graduates from the University of the Orange Free State, were appointed to the department. Schmidt retired in 1967 and was succeeded by D E Nel (previously at UNISA).

8.5 THE COMMUNITY OF SOUTH AFRICAN GEOGRAPHERS: SOME CHARACTERISTICS

The establishment and early development of geography departments has been characterised by (1) the diverse academic background of those who were responsible for the teaching of the discipline, and (2) the divide which existed between Afrikaans and English-speaking geographers. It also took a long time to establish an indigenous community of geographers, i.e. geographers educated within the country and occupying senior positions in geography departments. The following paragraphs endeavour to highlight some of these issues.

8.5.1 The establishment of a South African community of geographers: A periodisation

Geography in South Africa was initially dominated by academics who either received their professional training in related disciplines or who were trained in geography, but in European countries. The earliest beginning of academic geography dates back to 1914 when geography was proposed as a course of instruction at the Victoria College. After that geography was introduced to other tertiary educational institutions at a relatively rapid pace. Three distinct phases in the development of a South African community of geographers, based on the appointment of heads of department, can be identified (Fig. 2). The first phase is characterised by the introduction of courses

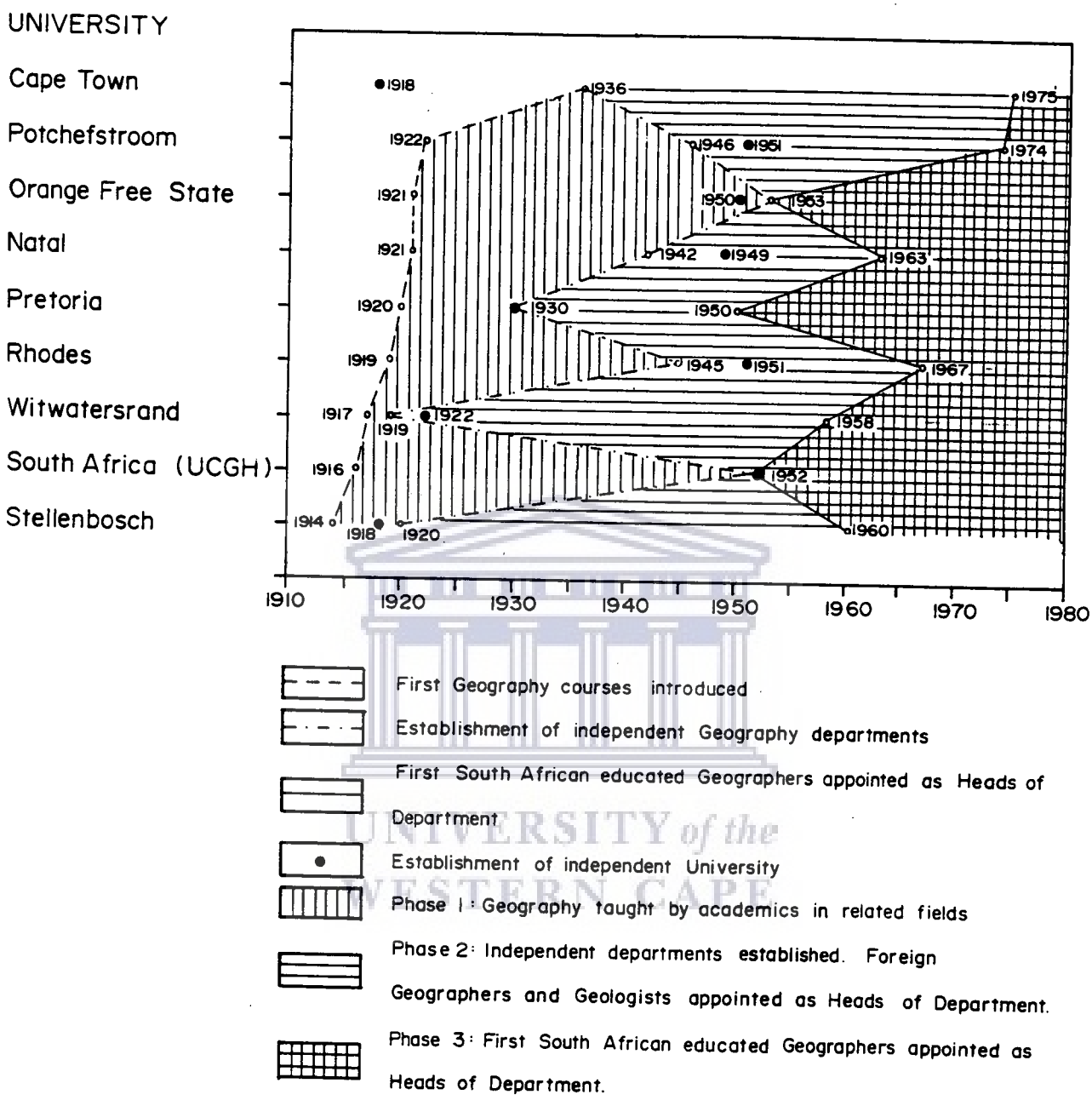

FIGURE 2 : THE HISTORY OF GEOGRAPHY IN SOUTH AFRICA : A PERIODISATION

in geography which were taught by academics in related disciplines. During the second phase geography was established as an independent field of study, headed either by foreign professionally trained geographers or geologists. During this phase a locally trained core of geographers gradually emerged, which, during the third phase, moved into senior positions and thus finally established the basis for a "South African" community of geographers. The latter phase had its origin in 1950 with the appointment of Scheepers at the University of Pretoria. By 1967 most universities in South Africa had a South African educated geographer as head of department. It is also interesting to note that geography existed as a field of instruction before most of the universities became independent institutions.

8.5.2 **Diversity in academic background**

Table 11 reveals the general academic background of the lecturers who taught geography since its institutionalisation until about the time the first South African educated geographers retired as heads of departments (see Table 8). The figures indicate the total number of degrees obtained at a particular institution by those who lectured in geography departments at the various South African universities. Although the majority of those who lectured had South African degrees, a substantial number had degrees from overseas. The latter group consisted of those who immigrated to this country and those from

South Africa who studied abroad. As far as the distribution of

TABLE 11 : **UNIVERSITIES WHERE LECTURING STAFF GRADUATED**

	WITS	NATAL	RHODES	UCT	UNISA	US	UP	UOFS	PU	TOTAL
Unknown	8	1		2	7	3		1	1	23
South Africa										
Wits	8	1			1					10
Natal	1	5	2							8
Rhodes	1	1	4	1		1				8
UCT	1	1	2	5	2			3		14
UPE*									1	1
Unisa	2	11			3	1	2	7	6	32
US					7	24	2	5	3	41
Pretoria					5	2	2		1	9
UOFS					2	1	1	3		7
PU					1				7	8
U.S.A.										
Louisiana					1					1
Columbia	1									1
Wisconsin	1	1								2
Chicago			1	1						2
California		1								1
Britain										
Oxon	1				1					2
Aberdeen	1				1					2
London	3	2	1	4	1		1			12
Cantab	1	2	5	1	3			1		13
St Andrews		1		1		1				3
Wales		3		1	2		1			7
Dunheim			1							1
Birmingham		1								1
Liverpool							1			1
Edinburgh						1				1
Netherlands										
Amsterdam					1				1	2
Utrecht						1				1
Belgium										
Ghent						1				1
Australia										
Melbourne	1									1
Sydney						1				1
New Zealand										
New Zealand		1								1
Italy										
Milan			1							1
West Germany										
Hamburg							1			1
Würzburg	1									1
Münster						1				1

*UPE=University of Port Elizabeth

South African degrees is concerned it is clear that there was very little if any cross fertilisation between English and Afrikaans geography departments. Of those who lectured at

English-speaking universities, none graduated from an Afrikaans university. The reverse is also true to a large extent. The great number of UNISA degrees are indicative of the many people who graduated through the system of constituent colleges before 1952.

Of particular importance is the number of lecturers who graduated at the Universities of the Witwatersrand, Cape Town, and Stellenbosch. The scholarly scene was particularly dominated by graduates from the University of Stellenbosch. This could be seen as an indication of the influence of Stellenbosch geography, especially as far as the geography departments at Afrikaans-speaking universities were concerned. While graduates from the Universities of Pretoria and the Orange Free State lectured at various other Afrikaans-speaking geography departments, the same cannot be said for graduates from Potchefstroom University.

Graduates from the Universities of the Witwatersrand and Cape Town dominated in the teaching of geography at English-speaking universities. Of particular importance, however, is the fact that graduates from the University of the Witwatersrand were mainly concentrated at the university itself. This is in contrast to the more "even" distribution of geography graduates from the University of Cape Town and other English-speaking universities.

Lecturers with degrees from overseas universities represented a

substantial input in the teaching of geography in South Africa, especially at the English-speaking universities. They also represented three continents: North America, Western Europe and Australasia. The majority of such degrees (83,5%) were obtained from universities in Western Europe. British universities were most important in this regard. Almost 85% of the West European degrees were obtained in Britain, most of them at the Universities of London, Wales and Cambridge.

8.5.3 **The language divide**

The language division among South African geographers is clearly shown in Table 12. Geographers at Afrikaans-speaking universities graduated mainly from geography departments at Afrikaans-speaking universities. The reverse is also true in the case of those who lectured at English-speaking universities. Geography departments at English-speaking universities were also to a large extent fed by overseas graduates. The divide is even more dramatic if one considers Table 13. No lecturers who graduated from Afrikaans universities lectured at English universities. Table 12 also indicates the extent to which inbreeding occurred, for example, 88% of Wits graduates taught at the University of the Witwatersrand. The same tendency could be established for the Universities of Stellenbosch, Rhodes, Natal, and Potchefstroom. This tendency is also revealed in

TABLE 12: **ORIGIN (PLACE WHERE GRADUATED) OF LECTURERS AT S.A. UNIVERSITIES**

	% FROM AFR. UNIVERSITIES	% FROM ENG. UNIVERSITIES	% FROM FOREIGN UNIVERSITIES
US	69(88)*	8 (6)	23 (6)
Rhodes	-	54(64)	46(36)
Wits	10(11)	45(47)	45(42)
Natal	29(23)	29(36)	43(41)
UOFS	69(100)	23(--)	7(--)
UP	60(75)	--(--)	40(25)
PU	87(87)	7 (7)	7 (7)
UCT	--(--)	31(31)	69(69)
Unisa	52(80)	12(--)	36(20)

* The figure within brackets indicates the situation after the establishment of independent geography departments

TABLE 13: **THE DISTRIBUTION OF GRADUATES AMONG UNIVERSITIES (S.A. GRADUATES ONLY - %)**

	US	RHODES	WITS	NATAL	UOFS	UP	PU	UCT	UNISA
US*	60	13				25		7	4
Rhodes		50		14				14	
Wits		13	88	14					9
Natal		13	12	72				7	35
UOFS	14				40			21	13
UP	4				20	25			9
PU	7					12	83	7	17
UCT								29	
Unisa	14				20	38	17	14	13

* "Krygskunde" included

Table 14 if the distribution of graduates in terms of language division is considered. All the lecturers who graduated from Afrikaans universities lectured at these universities. Graduates from English universities, on the other hand, lectured mainly at English universities. The divide between Afrikaans and English

TABLE 14: **DISTRIBUTION OF GRADUATES IN TERMS OF LANGUAGE (S.A. GRADUATES ONLY - %)**

	AT AFR. UNIV.	AT ENG. UNIV.
US	100	-
Rhodes	14	86
Wits	-	100
Natal	-	100
UOFS	100	-
UP	100	-
PU	100	-
UCT	50	50
Unisa	57	43

speaking geographers was also manifested in the establishment of two separate geographical societies: the South African Geographical Society (1917), based at the University of the Witwatersrand and The Journal for the Teaching of Geography (1957), based at the University of Stellenbosch. Both societies originated with the main aim of promoting the educational value of geography.

8.6 **SUMMARY**

South Africans (whites)[3] gained control over geography as an academic discipline almost four decades after the first steps towards its institutionalisation were taken at the Victoria College in 1914. By the early 1950s independent geography departments existed at all the universities in the country and the community of South African geographers became sharply

[3]It should, however, be noted at this point that until this time blacks were in no way involved in the institutionalisation process or in the establishment of geography departments at the various universities.

divided along language lines. A final question which needs to be addressed concerns the nature and content of the geography which has been introduced into our university system.

9. THE NATURE AND CONTENT OF ACADEMIC GEOGRAPHY

9.1 INTRODUCTION

While the previous section dealt with geographers as a community of scholars, this chapter analyses the nature of the geography that was introduced into geography departments at tertiary educational institutions. In order to gain some insight into the content and nature of geography taught after the early twenties, a content analysis of entries into university calenders has been made. The geography which was introduced in South African universities cannot be divorced from the development of the discipline at British universities. The last section of this chapter is, therefore, a brief reflection on the nature and content of geography at leading British universities at about the time when geography became an institutionalised discipline in South Africa.

9.2 GEOGRAPHY AS THE STUDY OF MAN-ENVIRONMENT RELATIONS

9.2.1 Geography at UNISA and its constituent colleges

The first UNISA syllabus was published in the Year Book of 1921 (APPENDIX 5.A), two years after Hutcheon introduced his syllabus

at the University of the Witwatersrand. There was no substantial difference between the UNISA syllabus, recommended by the University of the Cape of Good Hope in 1913, and the one introduced at the University of the Witwatersrand. Hutcheon's role is particularly important in the sense that he was the first chairperson of the Committee of Study in Geography at the University in 1921 (Table 5). His previous close relationship with the University of the Cape of Good Hope and his position as chairperson, afforded him the opportunity to promote his own conception of the discipline. Other members on the Committee at that time were E G Gamble, R U Sayce and E H C Schwartz, none of whom were professionally trained geographers. In fact, not one of the chairpersons who succeeded Hutcheon was a professional geographer. All of them, Sayce (1923-1931), Jehu (1932-48) and J S Van der Merwe, had their professional training in geology. This perhaps explains the strong emphasis on physical geography and the adherence to the environmental determinist conception of geography that was so prevalent at UNISA.

Geography was introduced at UNISA as a first year course in 1921, consisting of (1) geography as a subsidiary subject (one year course), (2) commercial geography (one year course), (3) geography as a major BA subject, and (4) geography as a major BSc subject. Apart from the specific emphasis on commercial geography, the courses included aspects of physical geography as well as topics such as "The geographical factors in human activities", "Natural regions", and "Anthropogeography". These topics, together with the books that were recommended, clearly

indicate the alignment of geography to the environmental determinist paradigm.

The University Calender of 1922/23 included geography for the first time as a three year course with only the basic outline of the various topics that were taught. The University Calender of the following year reflected a reworked and expanded, well defined syllabus, covering three years of study as well as a separate course in economic geography (APPENDIX 5.B). During the first two years the syllabus covered four main topics: (1) physical geography, (2) cartography, (3) biogeography, and (4) regional geography. In the third year biogeography was dropped and courses in human geography and the history of geography included. Books that were recommended included the following:

Biogeography:

Herbertson: Man and his Works

George: Relations of History and Geography

Keane: Man, Past and Present

Ripley: Races of Europe

Stone: Native Races of South Africa

Semple: Influences of Geographic Environment

Human Geography:

Brunhes: Human Geography

Chisholm: Handbook of Commercial Geography

Bowman: The New World

Economic (commercial) geography was regarded as so important

that it justified a separate course and included topics such as the influence of climate and soils on agricultural products, the distribution and exploitation of the world's mineral resources, the world's resources of power, labour supply, colonisation of new countries with special reference to the colonisation and exploitation of the tropics by white people; and the economic development of the major natural regions.

It was also possible to do a Masters degree in geography which required a thesis and coursework.

Environmental determinism and a concern with race provided an important framework for many courses of a human geographical nature. Over the years the contents of anthropogeography, biogeography, human geography and other courses of non-physical geography became more clearly defined. Topics which specifically referred to man-environment relationships include the following:

- Life of man in the natural regions.
- The influence of geographical environment on the life, arts, social organisation and migration of certain peoples.
- The influence of man on his environment, e.g. distribution of crops, trade (transport communication and colonisation), origin and growth of towns.
- Classification of races of mankind and the physical characters on which it is based; the geographical distribution of races.
- Regional geography: The influence of physical

conditions upon the economic and political development of regions.

- The influence of physical features, climatic factors and economic resources on the settlement, development and lines of communications in regions.
- Methods for rendering man's environment more beneficial to him.
- Social geography: The importance of race and environment in determining the habits and organisation of peoples; the philosophy of determinism.
- Political geography: The factors of physical, racial and social geography which have influenced the establishment of nationalities and states; the principles of frontier making.
- The influence of environment upon the economic and political development of regions.
- The combined influence of ... location, altitude and relief, the nature and distribution of soils and minerals, proximity to bodies of water, and climate ... on the distribution and growth of vegetation, and of animal life; and on the occupations, health and efficiency of man.
- Climate, and its influence on rivers, vegetation, animals and man.
- Importance of environment and race regarding habits
- Culture and natural regions.
- Influence of environment on mode of life.

- Man's reaction to environment.
- Man's attempts to exploit nature.
- Geographical factors in historical events.
- Physical, racial, social geography - influence on location and growth of nationalities.
- Frontiers - race and environment.
- Determinism/ indeterminism.
- Classification and distribution of the races of mankind.
- Influence of geographical environment on man and his activities - man and state.
- Study of racial groups, their distribution and their relation with the geographical environment.
- Philosophy of determinism.
- Life of man in the natural regions.
- Geographic factors in human activities.
- Geographic influence on cultural history.
- The influence of migration and environment upon racial development.
- Distribution of plants, animals and man.
- Influence of geographical environment on people.
- Influence of man on environment.
- Anthropogeography (classification of races).
- Vegetation regions of the world.
- Floral and faunal regions.
- Plants and animals of economic importance.
- Distribution of animals in relation to geographical conditions.
- Distribution of races and peoples.

- Modes of life in relation to environment.
- Human races.
- Economic/commercial geography.
- Plants and animals.

An analysis of the UNISA syllabuses until the early 1960s reveals that no substantial changes, in the nature and content of the discipline were introduced. All universities in South Africa, except the Universities of Stellenbosch and Cape Town originated as constituent colleges of UNISA. It is therefore to be expected that geography at these university colleges would have been greatly influenced by the nature and content of the discipline at UNISA. What follows is a brief overview of the main features of geography at these institutions.

The University of the Witwatersrand: It has already been indicated that the syllabus which was introduced at UNISA in 1921 was similar to the one introduced by Hutcheon at the University College of Johannesburg in 1919. Whether this syllabus had been introduced at UNISA prior to 1921 could not be established. Hutcheon introduced a very detailed curriculum for geography in 1919 (APPENDIX 9.C), in line with the ideas contained in the curriculum that was developed for the University of the Cape of Good Hope. Of fundamental importance is not only the main courses that were offered, but also the fact that geography was offered in both the Arts and Science faculties right from the beginning. The following courses were offered:

1. Geography as a subsidiary subject (one year)
2. Commercial geography (one year)
3. Geography as a major subject in
   (a) Arts
   (b) Science
4. Course for technological students
5. Special courses for teachers
6. Ethnology

The commercial geography course was offered to BA students as a one year course as well as to BCom I students. The special course for the technology students was of course in response to a request by the British Institute of Civil Engineers and consisted of topics in general geography, and industrial geography. It included lectures on the basis of manufacture, some important industries, and the main features of the industrial geography of a selected region. This course ceased to exist in 1921.

After Wellington's appointment in 1922, the syllabus was slightly changed. The syllabus resembles the 1923 UNISA syllabus, but with greater emphasis on physical geography, especially in the honours year. Following the appointment of Jackson in 1931 climatology developed into a major component of the geography courses.

Rhodes University: The first course in geography at the University of Rhodes was introduced in 1916 (Rhodes University, 1915). It consisted of two sections (APPENDIX 5.D): (1) the astronomical basis for geography, i.e. meteorology, climatology

and physiography, and (2) biogeography, i.e. anthropogeography and ethnology, social and economic conditions and their dependence upon the physiographic environment, and the history of geographical discovery. A practical course was also offered in addition to the above theory courses.

There was a slight change in the syllabus for 1917 making the intermediate stage the same as that for geology. The geography course was therefore spread over two years and offered within the department of geology, physics and history. From 1922, in accordance with the curriculum at UNISA, geography was offered as a one year course and as a major subject to both BA and BSc students. Most striking of these courses was their strong geological and physical geographical emphasis. The first year course was still the same as that for geology, while the second and third year courses included topics such as the earth as a planet, weather and climate, hydrography, the distribution of animals and plants, and general physical geography. The only non-physical geography topics included the world's peoples and the geography (ethnography) of Africa. This was also the first complete curriculum published under the chairmanship of professor Swartz. Geography students had to do at least one qualifying course in: history, mathematics, physics, botany and zoology.

Three new courses were added to the curriculum between 1925 and 1936, namely, a new course for the Higher Diploma, a first year qualifying course for BCom and BEcon students and a separate course in economic geography. With the establishment of the

Department of Geology and Geography in 1936, with Mountain and Rennie on the staff, only two courses were offered in geography, namely the separate course in economic geography and a first-year course. Both courses were entirely modelled on the UNISA curriculum. The second and third year courses were to be offered in 1937. Geography became an autonomous department in 1938 with Rennie as the only lecturer. The UNISA curriculum was then fully implemented. With only minor changes to the curriculum it remained, in terms of overall content, basically the same until the retirement of Rennie in 1971.

The first honours course was introduced in 1952. Students had to choose two topics from human geography (including social, political and historical geography), geomorphology (plus a major course in geology), and economic geography.

The University of Pretoria: The UNISA syllabus was included in the 1921 Year Book (APPENDIX 5.E), although a lecturer still had to be appointed. Sayce was appointed in 1922 and had the responsibility of teaching the syllabus to BA, BSc, and BCom students. He was succeeded in 1923 by Plummer. There were no significant changes to the syllabus under Plummer.

In 1957, after the appointment of Scheepers as head of the department (1950), the curriculum changed slightly. Meteorology was introduced on all levels, while in the first year "new" lectures were given on South Africa and other major countries (political units) from a military viewpoint. Biogeography and

anthropogeography remained important components of the curriculum. Except for a few additions to the curriculum such as courses on Africa, urban and political geography in 1973, the curriculum remained basically the same until the retirement of Scheepers in 1975.

The University of Natal: A Department of Geology and Geography was mentioned in the University Calender as early as 1921. By 1926 geology and geography existed as two separate courses with Sayce lecturing in both. The UNISA curriculum was followed until 1949/50, when several changes to the curriculum were implemented. The implementation of a new curriculum was preceded by two new appointments, namely, Jehu as professor in 1942 and Fair as lecturer in 1949. The implementation of the "new" curriculum also coincided with the granting of autonomous status to the University College on 15th March 1949.

Although new topics were introduced for the different courses, the underlying environmental determinist philosophy seems not to have been changed at all. Two new courses were introduced at the first year level, i.e. "Human Geography", consisting of lectures on landforms and man, climate and man and resources and man, and "The Geography of Africa', including aspects such as the native people's of Africa, European and non-European immigrant communities, European and native economies and problems of development. The second year course was again divided into physical (meteorology, climatology and oceanography), human geography and regional geography. A more radical change occurred

in the third year course. Physical geography was completely eliminated and the whole course consisted only of human and political geography, world regional geography and a regional study of South Africa with special emphasis on the province Natal. The former included lectures on geographical concepts, the determinist and possibilist concepts, a study of environmental influences through an examination of the habitats and economies of primitive and advanced communities, and the principal zones of tension in the modern world.

The curriculum remained the same until 1964 when the third year course was slightly changed. Under the chairpersonship of Williams (appointed in 1963), physical geography (geomorphology) was brought back into the third year course.

The University of the Orange Free State: Geography at the University of the Orange Free State had a very slow start. It was introduced as a first year course in 1922 (APPENDIX 5.F) and was taught as such until 1935. A third year course was only introduced in 1944. There was no significant deviation from the UNISA curriculum. There were minor adjustments to the curriculum after the College became an autonomous university in 1950 and Schmidt's appointment as acting head in 1953, the same year as geology and geography were separated.

Although the UNISA geography was still very dominant, Schmidt introduced several "Stellenbosch topics". This included lectures on the following: "Natural Regions of the World", "Geography of

Africa and Australia on the basis of natural regions, with special reference to South Africa". Other aspects that point to a Stellenbosch influence included seminar exercises, and "landsbeskrywings". The first separate economic geography course was also introduced by Schmidt in 1954.

The University of Potchefstroom: Van der Merwe, a geologist, who was appointed to teach geography at the University of Potchefstroom in 1935, was also, at the same time, appointed to the Committee of Studies at UNISA. This had a direct influence on the nature and content of geography that was taught. Until the early fifties the UNISA curriculum was followed slavishly (APPENDIX 5.G). It should, however, be mentioned that Van der Merwe discarded the first year biogeography course in 1946 and replaced it with a course in economic and commercial geography. This course included lectures on agricultural geography, industrial geography and aspects of commercial geography, like communication (transport) and trade centres.

After the College gained its status as an autonomous university in 1951, the geography courses were largely restructured, although major components of the UNISA curriculum were retained. On the human geographical side, anthropogeographical perspectives remained of central importance. In the second and third year courses, a major section was set aside for anthropogeography. Topics included the classification of races, race and environment (determinism and indeterminism), and political geography and geopolitics. Africa remained an important regional study and also

included a section on "Race and Economic Activities".

A major philosophical shift is reflected in a revamped third year course published in 1963. Apart from courses in geomorphology and soil geography the main emphasis was on the "Region" and the "Planning of Regions". This was apparently an outflow of a course, "Modern concepts and streams in Geography", introduced in 1951, and in which aspects such as "The Regional Concept" and "Applied Geography" were discussed. Of particular importance in this regard was the course in "Planning of Regions". This included lectures on geography and planning, planning problems, and regional planning in the Republic of South Africa. This concern with regional planning eventually led to the appointment of Potgieter, a specialist in the field, in 1966, and the establishment of a Department of Geography and Regional Planning in 1969.

Van der Merwe's retirement coincided with the publication of a new curriculum in 1972. A new course in "Natural Regions of the World" was introduced together with general regional geography courses. New systematic fields that were introduced include urban geography in the second and third year and political geography in the honours course.

9.2.2 **Geography at the University of Stellenbosch**

From its establishment as an autonomous department in 1921, geography was taught by Prof Serton and Le Roux (miss) from the history department. The latter was mainly responsible for courses in the history of geography (2nd year) and general political geography. Serton's outline of the geography courses differed markedly from those of his predecessors. The geography syllabus introduced by Serton, was clearly not a continuation of what had been taught at the university until then and it also differed markedly from that which was introduced at the University of South Africa. Environmental determinism, and in particular the concern with anthropogeography, which provided the context for the earlier Stellenbosch syllabi and which formed the basis for the UNISA geography, did not feature so explicitly in Serton's geography. The only reference made to "geographical influences" related to a third year course on "General Political Geography' introduced in 1921. The course specifically emphasised the geographical influences on history and was taught by Le Roux. However, Serton gradually accommodated perspectives and courses similar to that at UNISA. Various new courses were introduced after 1925, amongst them a course in ethnography and a separate course in economic geography taught by Conradie in 1929. An interesting new addition to the economic geography course was "Geography of transport" in 1933, Serton's field of specialisation. Very significant, however, is the shift towards more explicit environmental deterministic and racial issues in

1934. The geography of Europe, Asia, America and Australia, was, for example, dealt with on the basis of a classification according to climatic types in the first year course. The second year theory course was also supported by exercises and discussions on such topics as problems ("vraagstukke") of race, population density and cultural relationships. Similar topics were more rigorously introduced since 1945:

1945:	"Geography of Asia, America and Australia based on natural regions"
	"Climatology, plantgeography and population distribution"
	"Plant and animal geography and racial relationships"
1946:	"Climatology and population distribution"
1957:	"Population distribution and 'rasverhoudings'"
1959:	Military Geography - "Introduction to race geography and political geography".

Although, with the appointment of Nel as professor and head of the department in 1960, courses in geography were radically restructured. In terms of content they were clearly in line with the Serton "tradition". Most significant was the continuing emphasis on regional geography, based on natural regions and the "geographical influences in the economic geography course: "Climatology with special reference to economic aspects".

Serton's emphasis was clearly on Human Geography. Physical Geography ("Natuurkundige Aardrykskunde") featured only in the general discussions of the various continents and then only as background to human geographical aspects.

Under Nel's leadership geography was also recognised as a discipline to be taught in the Science Faculty (from 1963). In 1965 the department differentiated between Physical (Geomorphology and Climatology) and Human Geography (urban and political geography) on the third year level. The same differentiation also existed at Honours level except that political geography was replaced with regional planning.

9.3 GEOGRAPHY AS THE STUDY OF LANDSCAPE: A LATER INNOVATION

Geography was introduced at the university of Cape Town in 1936. Talbot was the only lecturer in the department and he had to teach a first and second year course to both BA and BSc students.

Talbot's courses were markedly different from the courses which were offered at the time at other South African universities. His courses consisted mainly of physical, cultural, and economic geography, illustrated by regional studies of Africa, Europe and North America. His first second year course also included lectures on the British Empire with special reference to Africa. A third year course was added in 1941 with the focus on geomorphology and the cultural geography of Europe and Asia. Apart from the introduction of lectures on colonial development in Africa in 1944 the syllabi remained basically the same until the early fifties. A separate course in economic geography has been introduced for BA and BCom students in 1952.

Geography courses were gradually restructured since 1954. A BA and BSc Honours course was added as well as various other undergraduate courses such as climatology, oceanography, bio-geography and pedology, elements in cultural geography, the history, scope and methodology of geography. Since the early seventies, geography was again restructured in line with the notion of geography as a spatial science. Location theory became important, while issues such as economic development, urbanisation, application of geography in urban and regional planning were also dealt with.

The environmental determinist philosophy which formed the basis of geography at UNISA and at the University of Stellenbosch, could not be detected in the UCT geography courses. The only "geographical influences" course was taught to Honours students after 1963, namely, "Geographical influences in cultural history". Instead, Talbot's academic training in British and American cultural geography came to the fore clearly in courses such as, "An Introduction to the Scientific study of Scenery", "The relation of culture and habitat to the economic life of hunting and gathering, pastoral and agricultural peoples", "The domestication of plants and animals", "The spread of European commerce and colonisation", and "The evolution of the cultural landscape".

A summary of human geography courses offered at the different universities in South Africa, is presented in Table 15. Courses

TABLE 15: **HUMAN GEOGRAPHY COURSES AT SOUTH AFRICAN UNIVERSITIES**

	US	UN	UP	WI	RH	NA	UO	UC	PU
Human Geography	*	*	*	*	*	*	*	*	*
Systematic Geography									
- Political	*	*	*	*	*	*	*	*	*
- Economic	*	*	*	*	*	*	*	*	*
- Commercial	*	*	*	*		*	*	*	*
- Population	*	*	*	*	*			*	
- Social	*	*	*		*		*		*
- Urban	*	*					*	*	*
- Rural/Agriculture		*						*	*
- Cultural		*	*					*	
- Regional Planning	*								*
- Applied	*							*	
Regional Geography									
- Africa (S.A. incl.)	*	*	*	*	*	*	*	*	*
- Europe	*	*	*	*	*	*	*	*	*
- America	*	*	*	*	*	*	*	*	*
- Asia	*				*	*	*	*	*
- Australia	*		*			*	*	*	*
- World geography		*	*		*		*	*	*
- Soviet Union	*					*		*	
- Middle East	*						*		
- World econ. regions								*	
- Eurasia				*					
- British Empire (Africa)								*	
- Common Wealth	*								
Anthropogeography	*	*	*	*	*	*	*	*	*
Biogeography	*	*	*	*	*	*	*	*	*
Ethnology/Ethnography	*		*	*	*		*		
Race geography /relations	*		*				*		
History and Philosophy of Geography									
- History of geography/ ideas/thought/method	*	*	*	*		*	*	*	*
- History of geographical discovery/exploration	*	*	*	*	*		*	*	
- Historical geography		*	*	*	*	*	*		
- The nature of geography/ geography as a science/ purpose/ modern trends	*	*					*		*
- Evolution of the map of the world		*		*			*		

US= University of Stellenbosch; UN= University of Natal; UP= University of Pretoria; WI= University of the Witwatersrand; RH= Rhodes University; NA= University of Natal; UO= University of the Orange Free State; UC= University of Cape Town; PU= University of Potchefstroom for CHE.

included in this table are those which were taught until the

retirement of most of the first generation of heads of department educated in South Africa (i.e. late 1950s to early 70s)

9.4 **THE BRITISH CONNECTION**

The nature and the content of the academic geography which became institutionalised in South Africa, was fundamentally linked to the content and nature of the discipline in Western Europe, and in Britain in particular, during the second decade of this century. This link was established as a result of the contact between the educational authorities at the Cape, as well as individual scholars, and institutions of higher learning in Britain. Geography departments which came to play an important role in influencing, indirectly, the final drafting of geography syllabuses in South Africa were the Universities of Oxford and Cambridge. The Oxford School of Geography could perhaps be singled out as the most important catalyst for the development of geography in South Africa, particularly as far as direct contact was concerned. Herbertson played no minor role in stimulating an interest in academic geography inside South Africa. He was, for example instrumental in the establishment of a South African Branch of the Geographical Association. The Geographical Teacher, on the other hand, was very successful in influencing the educational authorities and convincing them of the value of geographical education. In Britain, The Oxford School of Geography dominated the field of geographical education for many years. Before 1920 Oxford had furnished the whole of the

teaching staff of six departments of geography in universities or university colleges in Britain, and one or more members of staff of six more (Oxford University, 1954).

To show the extent to which South African geography syllabuses resembled those in Britain, syllabuses from three universities, namely Oxford, Cambridge, and London have been selected for comparison (For more detail and more syllabi see APPENDIX 9.H). The syllabuses were for the year 1913/14, about the time that geography in South Africa was to be institutionalised. The British syllabi remained the same until after the institutionalisation of geography at the University of the Cape of Good Hope in 1916.

UNIVERSITY OF OXFORD
School of Geography

History: Reader since 1887, Department since 1899
Staff: A J Herbertson (Professor and Director)
N F Mackenzie (Instructor in Surveying)
H O Beckitt (Assistant to the Professor)
N E MacMunn (Modern history)
A G Ogilvie (Junior Demonstrator in Geography and Librarian)
A J Toynbee (Ancient Geography)
W G Kendrew (Metereology)

Coursework:
Part I : General and Regional Geography (Two written papers and one practical paper)

- Cartographic analysis of the physical regions of the world
- Chief generalisations regarding the surface-forms of the land
- Movements of air and water
- Distributions of plant-associations, animals and man
- Chief factors of modern economic and political geography considered in relation to the influence of physical and biological conditions.
- The British Isles and British Lands beyond the Seas
- Principles of field map-making, by plane-table, prismatic compass, clinometer, and aneroid; the presentation of relief; the preparation of distributional and statistical maps; the orientation, reading and measurement of maps.

PART II: Subject below 1 and any two of the other nine subjects, in each of which there will be two papers,

one of which may be wholly or partly practical.

1. Geographical Account of a Selected District
2. Special Regional Geography
3. Climatology and Oceanography
4. Geomorphology
5. Biological geography
6. Economic and Political Geography
   (a) Conservation and development of regional resources
   (b) The internal conditions and the external relations (economic, strategic, and political) of a selected region.
7. Ancient Historical Geography
8. Modern Historical Geography
9. The History of Geography, including the history of Discovery
10. Surveying

UNIVERSITY OF CAMBRIDGE

Department of Geography

History: Lecturer 1888, Reader 1898, Board of Studies 1903

Staff: P Lake (Secretary and lecturer in Regional and Physical Geography)
H T Oldham (Lecturer in Historical and Economic Geography)
A C Haddon (Reader in Ethnology and lecturer in Anthropogeography (Nat. conditions in Human societies)
J E Marr (Lecturer in Geology)
J S Gardiner (Professor in Zoology)

Coursework:
Schedule for the Special Examination in Geography for the Ordinary BA Degree and Part I of the Examinations for the Diploma in Geography

1. Physical Geography
2. Historical and Political Geography
3. Economic and Commercial Geography
4. Cartography
5. History of Geographical Discovery
6. Races of Man

Schedule for Part II of the Examination for the Diploma in Geography
1. Regional Geography
2. Surveying and Mapping
3. Geomorphology
4. Oceanography and Climatology
5. History of Geography
6. Anthropogeography

UNIVERSITY OF LONDON

Staff: Appointed teachers in geography
L W Lyde (University College)
H J Mackinder (London School of Economics)
J F Unstead (Birkbeck College)

Coursework:
Intermediate Arts Examination

1. General Geography
2. Regional Geography

Arts (Final Pass), BA
1. The subject for the intermediate examination plus:
   - Regional geography in greater detail
   - Cartography
2. Practical

Intermediate Economics
1. General geography
2. Regional Geography

Economics Final Pass and Honours
- Geography with special reference to the economic and political development and present organisation of Europe and North America

London School of Economics and Political Science

Staff: J H Mackinder
A J Sargent (Professor of Commerce, University of London)
Prof Gerwood
Prof Lyde
Miss H Rodwell Jones (Demonstrator)

Coursework (Geog Certificate)
1. Intermediate course (Lyde)
2. The British Empire in Geographical Perspective (Mackinder)
3. Historical Geography of Europe (Mackinder)
4. Historical Geography of Europe for Teachers (Mackinder)
5. Modern Historical Geography (Sargent)
6. Origin of Scenery (Lakes) (Gerwood)
7. Geography of European Railways (Sargent)
8. Practical Work (Sargent)
9. Defaulted Geography (Mackinder & Sargent)
10. Research (Mackinder)

University College

History: Department since 1903
Staff: E J Gerwood
Yates - Goldsmith (Professor of Physical Geography)
L W Lyde (Professor of Economic Geography)
M T M Ormsby (Lecturing in Surveying)

Coursework:
Physical Geography (including metereology)
Regional Geography from the economic point of view
Regional Geography from the political point of view
Regional Geography with special reference to the relations of Physical Geography to Political and Historical Geography

Practicals:
Mathematical geography and other aspects of the Science of importance in their educational bearing.
A course on climate and climatic control.

Birkbeck College

Staff: J F Unstead

Coursework:

1. Principles of Geography, with special reference to the most important regions
2. Advanced Studies in Physical and Human Geography

King's College

Staff: T F Sibly (lecturer)
A H Cox (Ass lecturer and demonstrator)

Coursework:

- Physical Geology

That there are clear similarities between the British and the South African geography syllabuses is unquestionable. It is, however, important to note that the South African syllabuses placed much more emphasis on bio- and anthropogeographical aspects.

9.5 **SUMMARY**

This chapter has indicated a clear link between early twentieth century academic geography in Britain and that which has been developed inside South Africa. While the foundation for this relationship was laid by Shand in 1914, Hutcheon played a major role in furthering the cause of the discipline in South Africa. He was the first to be appointed to a university post to teach geography. He was also the first chairperson of the Committee of Studies at the University of South Africa. These positions made of him a very influential geographer. The principles on which the first South African syllabuses were built remained intact for

many years after Hutcheon's early death in 1922. The first substantial shift in the content of university geography syllabuses came about towards the end of the 1960s and early 1970s. This coincided with the retirement of the first generation of South African educated heads of geography department, but also with the gradual filtering through, from the United States of America, of positivism and the quantitative revolution in geography.

The institutionalisation of geography in South Africa, within the context of the environmental determinist paradigm represents another phase in the imposition on South African society of a particular geographic world view. It was another important step in the colonisation of the geographic mind. Based on an understanding of the history of geography in South Africa, the final chapter is an endeavour to also reflect on the discipline's future development.

10 SUMMARY AND CONCLUSION : THE COLONISED NATURE OF GEOGRAPHY - PROSPECTS FOR ITS FUTURE DECOLONISATION

10.1 INTRODUCTION

The existence of geography in South Africa, both as a school subject and as an university discipline, is fundamentally linked to the contribution it could make to schooling during the period of British colonial rule. After the establishment of British rule in South Africa, and particularly in the aftermath of the Anglo-Boer War (1899 - 1902), the British authorities realised that people could not be ruled by political force alone, but that the control of ideas played an equally important role. It was, therefore, also necessary to colonise the minds of people, and the best way the ideology of empire could be promoted, was to harness the educational system. Geography, as a school subject, was seen to be an important medium through which imperial ideology could be inculcated in the minds of young people, and it was, therefore, moulded to serve the needs of the colonial rulers. Geography was made, not only in a physical and spatial sense, but it was also made in the mind.

This, to a large extent, confirms the interrelationship between knowledge and social structure referred to by Granö (1981) in his

contextual model for geography (see chapter 1, p.8). However, the process of geography's institutionalisation as an academic discipline, which is for Granö (1981) an outflow of his model, does not concur with the discipline's institutionalisation process in South Africa. Granö (1981) sees the process of institutionalisation as taking place in three phases: from an originally unorganised body of knowledge from which the scientific content of geography has developed, to practical action from which research praxis has evolved, to finally, a social institution, which is geography as an academic discipline. However, in South Africa, geographical research practice did not create the need for an institutionalised discipline. In South Africa, geography has been introduced into our educational system to serve the needs (educational) of the British colonial authority, and it also clearly reflected the processes involved in the historical development of the discipline in Western Europe and particularly in Britain.

Geographical education, as part of an educational system, devised to promote the ideology of empire, became instrumental in also colonising the geographical mind. The institutionalisation of geography in South Africa was not preceded by Granö's first two phases. It, therefore, differs substantially from the early histories of, for example, sociology (Groenewald, 1984) and criminology (Van Zyl Smit, 1989). Sociological and criminological research, and the needs in South African society of such research, was fundamental in establishing sociology and criminology as academic disciplines. Geography, on the other

hand, became an institutionalised discipline after a long period of struggle to convince the educational authorities of its scientific and educational value.

Very little research has been done on the history of geography in South Africa. Especially in the present context of decolonisation, it is necessary also to decolonise our minds, and this begins with an understanding of how current thinking came to be. We cannot effect a process of change without first knowing how changes came about in the past. This research is mainly concerned with the institutionalisation of geography in South Africa and in particular the process by which ideas, geographical ideas or ideas about geography, were imposed on people in order to justify imperialism. It has been shown how, with the intensification of British imperialist influence during the nineteenth century, geography was seen to be an important instrument in establishing British hegemonic control. It is also suggested that the changing educational environment in South Africa during the early years of this century, prompted by socio-economic and political transformation, provided the basis for continuous British influence in geographical discourse and that this led to the introduction of the "new" geography and, eventually, the establishment of geography as an academic discipline.

The main purpose of this chapter is to summarise the main findings of the research. In the light of the growing debate regarding the decolonisation of education and scientific

discourse in South Africa, this chapter will also, in conclusion, briefly reflect on the decolonisation of geography.

10.2 EMPIRE EDUCATION AND THE HISTORICAL ROLE OF GEOGRAPHY AS A SCHOOL SUBJECT

Geography was granted official status in the curriculum for the elementary classes when the Cape Education Department was established in 1839. The inclusion of geography in the curriculum was regarded as important, not only in view of the contribution it could make to a more "liberal education" in South Africa, but it was also seen to be relevant as far as the inculcation of empire sentiments in young people was concerned.

However, during the mid nineteenth century, geography was not highly regarded as a secondary school subject in the schools of the Cape Colony. Secondary geography did not exist although geography of secondary standard was offered by the Board of Public Examiners in Literature and Science (previously the Cape Public Service Board) in 1858. In 1873 the examining powers of the Board were transferred to the newly-constituted University of the Cape of Good Hope, which was modelled on the University of London, and geography was gradually phased out as a subject for the University examinations. From 1901 geography was no longer prescribed for the secondary examinations of the university.

Comparable information on the teaching of geography in the other territories (Natal, The Orange Free State and Transvaal) is, however, not readily available. It could, however, be argued that the nature and the content of the geography which was taught in the Cape Colony was merely duplicated in the other colonies. Of particular importance is the more explicit emphasis that was placed on empire geography in Natal since 1877, and in the Orange Free State and the Zuid Afrikaanse Republiek, after the end of the Anglo- Boer War. The teaching of empire geography should not be seen in isolation. It was part of the overall strategy of the colonial authority to anglicise society and to portray South Africa as part of the British Empire.

Despite the peripheral status of geography, i.e. as a subject for elementary school only, the educational authorities remained convinced of the value of geographical education. During the Edwardian period, more than previously, imperial sentiment in Britain and abroad was systematically promoted and mobilised. At the forefront of the "Imperial Studies Movement" were three London-based imperial societies: the League of the Empire, the Victoria League, and the Royal Colonial Institute. Both the League of the Empire and the Victoria League were very active in South Africa, where the subsequent reestablishment of education occurred within the context of the development of the discipline in Europe. There the study and the teaching of geography was vigorously promoted during the latter part of the nineteenth century, largely, to serve the interests of imperialism. In the colonies, however, education in general and geographical

education in particular had to respond to imperialism in a very specific way. The context for geography's contribution to "Empire Education", was clearly outlined by Lt -Colonel H Elsdale of Natal, in 1895 and was underlined by similar sentiments expressed in the annual report of the Council of the Royal Colonial Institute in 1898, namely, that "... they were deeply impressed with the fact that it is incumbent on the greatest and most successful colonising nation of the world to impart to the rising generation a full and accurate knowledge of geography, more especially as regards the British possessions" (Andrews, 1900, p. 103).

The Royal Colonial Institute was never directly involved in promoting the teaching of geography in South Africa. However, it was very supportive of the geography department at the University of Oxford and in particular the establishment of The Geographical Association, and its official organ, The Geographical Teacher, both of which were influential in South Africa. In his presidential address to the Annual Meeting of the Geographical Association in 1903, Freshfield noted: "They must remember that the business of the Association was to rub into the British public the practical importance of geographical intelligence, whether in war or in politics, in commerce or in colonisation" (Freshfield, 1902/4, p. 10). It was one of the first objects of the Association to "give British citizens a clear understanding of the territories oversea that constitute the British Empire" (The Geographical Teacher, 1902/4, p. 12). The cordial relationship which existed between the geography

department and The Geographical Association, made it possible to infiltrate The Geographical Teacher in order to promote empire sentiments. During the early twentieth century, The Geographical Teacher became the sole medium on which the Cape Education Department based its conception of geography. Many articles in this journal were, for example, reprinted in local journals such as The Education Gazette and The Educational News. Teachers were also regularly urged to subscribe to The Geographical Teacher, and the Cape Education Department was even prepared to subsidise subscription fees.

After the Anglo-Boer War, the inculcation in school children of a single-minded loyalty to British rule, emerged as a very high educational priority. The promotion of this was seen as the first object of all education, especially in the new territories. It was regarded as the duty of the state to devote its attention first and foremost to fashioning a loyal and contented population. It was the purpose of early twentieth century education "to win over the young generation of Dutch Africanders to English ways of thought and speech, and to get them to understand the greatness of the English Imperial Idea" (Behr and Macmillan 1966, p.126). The Anglo- Boer War could have played a major role in the establishment of patriotic societies such as the League of the Empire (1901), as the moral credibility of the imperial idea was clearly at stake. Britain had suffered heavy Continental criticism, argues Greenlee, "because this was a war waged not against Zulus or Afghans, who could it was held, be expected to profit by the imposition of white rule, but against

the European inhabitants of two small nation states" (Greenlee, 1987, p. 10).

Geography responded positively to the idea of "Education and Empire", and lessons on the British Empire were included in the school geography syllabuses. A full year was, for example, set aside for empire education in the pupil-teachers' course. While empire sentiments had to be inculcated, there was a parallel need to justify the Anglo-Boer War. Information provided in textbooks, for example Gill's "Students' Geography", was generally used to create positive images of the English, while the Afrikaner were portrayed inhuman. The English were presented as the freers of slaves, while the Afrikaner indulged in the killing of blacks. The annexation of the Boer Republics was, therefore, justified, because the Boers were killing blacks, and the war was, a necessary punishment for disobedient subjects (De Unie, 1908).

The importance of geography, as far as empire education is concerned, is also reflected in the introduction of the Duke and Duchess Prize for geography which was instituted following the visit of King George V. A major role of geography was, therefore, to foster among the public, particularly the Afrikaner, an acceptance of their status as part of the British Empire. The representation of British interests as universal, constituted a significant component of geographical education.

Although the Boers protested vehemently against the anglicization of society in general, and the way geography was taught, school

geography remained committed to the British ideology of empire, well into the second decade. A major portion of the first syllabus for the matriculation certificate, drafted in 1913, consisted of the geography of the British Empire. In the meantime, however, other needs had also developed within the broader society and these demanded a philosophical and methodological re-orientation of geography.

10.3 **THE CHANGING ROLE OF GEOGRAPHY**

10.3.1 **Introduction of the "new" geography**

By the turn of the century the educational system had to be transformed in order to accommodate new demands. It was increasingly realised that in order to facilitate industrial and commercial development in a very competitive world, the development of science would be of paramount importance. This clearly echoed a more general concern with efficiency in British society at the time. Those who were concerned with linking education and imperial unity, according to Greenlee (1987), also took a keen interest in the promotion of scientific education for the sake of efficiency. The two priorities, imperial unity and efficiency were therefore not seen as mutually exclusive, but as two sides of the same coin.

The quest for science education placed a heavy responsibility on the shoulders of those who advocated the necessity of

geography in the school curriculum. What follows is a brief outline of the process by which "modern" and scientific geography was introduced to serve the "other" needs of the colonial society. The introduction of "modern, scientific" geography in South Africa dates back to the early years of this century, deeply rooted in the British tradition of the time. The need for a "scientific" and "modern" geography, culminated in the publication, in The Education Gazette, of the "Syllabus of Instruction in Geography" produced under the auspices of the Royal Geographical Society in Britain. The "man-environment relationship" was presented as fundamental to an understanding of the nature and scope of geography, and this undoubtedly set the scene for the future development of geography in South Africa.

The teaching of geography was further nourished by the establishment of a geographical society in 1905. In September of that year Dr A J Herbertson, then Reader in Geography at the University of Oxford, visited the country as the Honourary Secretary of the British Geographical Association. Dr Herbertson addressed a specially convened meeting with the purpose of discussing the advisability of starting a branch of the Association in South Africa. The Geographical Association sought to unite teachers in different parts of the empire in a common effort to further the principles of geographical education, and after the address a resolution was carried that a branch of the Association be formed. The establishment of the South African branch of the Geographical Association was welcomed by the

Department of Education, but it was shortlived. The South African Branch of the Geographical Association ceased to exist in 1907 and its membership transferred to the parent association, furthering direct British influence in the development of geography in South Africa.

Nonetheless, in retrospect, it is evident that Herbertson's visit to South Africa and the establishment of the South African Branch of the Geographical Association provided the necessary impetus for the development of geography on "modern" and "scientific" lines. This was reflected in the contents of various articles and documents published in the Education Gazette. The first concrete step to implement the new ideas and concepts in geography, came about with the establishment of a committee by the South African Teachers Association in 1910. They were charged to develop a scheme for the "Revision of the Syllabus in Geography". The committee's conception of geography was distinctly determinist. As a basis for their own work they adopted, verbatim, the definition of geography in the British document "Suggestions for Teaching Geography". The SATA scheme was eventually adopted by the Cape Division Teachers' Association, but not throughout the country. The Education Department felt that the SATA-syllabus, would have created chaos since the teachers were not adequately trained to teach the "new" geography. Instead, it was decided to introduce the "new" geography on the level of the Third Year Senior-Pupil Teachers' Course.

10.3.2 Environmental determinism: A conceptual framework for geography as an academic discipline

Since the Herbertson visit, and the establishment of the South African Branch of the Geographical Association, various "geography enthusiasts" took it on their shoulders to promote and facilitate the academic debate regarding geography in South Africa. With the necessary support from the Education Department, these enthusiasts became the main advocates for academic geography in the pre-academic phase. Towards the middle of the first decade the teaching of geography was becoming more and more the work of specialists. This served as additional motivation for the geography enthusiasts, like A Ritter, J Jamieson, and J Hutcheon, to pressure the authorities of the University of the Cape of Good Hope to introduce geography as an academic discipline.

Geographical research was never a priority. The discipline was promoted in reference to its status overseas and the contribution it could make to general education within South Africa. However it was gradually realised that, in order to make a "scientific" impact, geographical research and not simply teaching would have to be put on the agenda. In his address in 1915 to the South African Association for the Advancement of Science, Hutcheon divulged details of "several men" who had already formed themselves into the nucleus of a Geographical Society, with their main aim to consider the preparation of South African

geographical monographs. Hutcheon himself became increasingly involved in developing ideas for the study of local geography, and was particularly interested in aspects of climatic control. The focus on climate is significant given its larger role in contemporary environmental determinist ideology which legitimated supposed European superiority in the struggle for survival. Environmental or geographic determinism was, therefore, a significant ideological buttress for imperialism and racism, and it found fertile breeding ground in South Africa. This paved the way for geography's incorporation into the curriculum for the University of the Cape of Good Hope's higher examinations as well as its institutionalisation as an academic discipline[1]. Geography became an institutionalised discipline in 1916 (at The University of the Cape of Good Hope) and a subject for the Matriculation Certificate in 1918. The syllabi for both the B.A Pass Examination and the Matriculation Certificate were clearly in the mould of the environmental determinist philosophy. The principles on which these syllabi were based provided the context for geography courses in South Africa until the late 1960s. Environmental determinism could conveniently explain the dynamics of a racist society. White supremacy, economic exploitation, and the exploitation of blacks in particular, could be justified. This, initially, also served British imperialist needs inside

[1]Until this time the University authorities and many school principals and teachers could not be convinced that geography was essentially scientific in nature. Many teachers of other subjects also felt threatened by the inclusion of geography in an already overcrowded curriculum. The "new" geography, and environmental determinism in particular, provided the necessary scientific basis for geography and it was therefore more readily recognised as a science to be institutionalised within the South African context.

South Africa. The institutionalisation of geography as an academic discipline in South Africa, should therefore be seen as a result of a process in which the needs of the society on the one hand, and developments in the nature and scope of the discipline, internationally, on the other hand, played an important role. The syllabi established at South African universities were largely a duplication of what was offered at British schools and universities. The British influence was further entrenched by the fact that many of the academics who were responsible for the teaching of geography during the early years were either British in origin or received part of their geographical training at British universities[2].

While Afrikaners largely rejected "Empire Education" in the British mould, they could identify with environmental determinist geography. The Hebertsonian concept of "natural regions", for example, became the hallmark of Afrikaner geography in the early decades of the twentieth century. It was, however, not until the late thirties that a specifically Afrikanerised geography emerged. In July 1939, at a congress for Christian National Education (C.N.E.), organised by the Federation of Afrikaans Cultural Organisations (a Broederbond offshoot), strategies were discussed to counteract the Hertzog government's plans for dual medium education. These plans were seen as a renewed attempt to Anglicise Afrikaner children. The congress set up an Institute (I.C.N.E.) to investigate issues concerning Afrikaner education.

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[2]The international impact on the historical development of geography in South Africa is supported by the international perspective dealt with in chapter 3.

In 1948 the I.C.N.E. issued a report in which geography featured very prominently. Fundamental to the report was the recognition of Christian-Nationalist principles in education, i.e. that Nationalism ought to be rooted in Christianity, and that a love for one's own language, history and culture should be instilled in the Afrikaner. Concerning the content of education, the report urged that in no subject may anti-Christian or non-Christian or anti-Nationalist or non-Nationalist propaganda be made.

Geography turned out to be one of four core subjects identified by the I.C.N.E. The other three were religious teaching, mother-tongue, and history. Concerning the content of geography the report stated: "Every nation is rooted in a country (Landsbodem) allotted to it by God. Geography should aim at giving the pupil a thorough knowledge of his own country and the natural objects pertaining to it, in such a way that he will love his own country, also when compared and contrasted with others, and be ready to defend it, preserve it from poverty, and improve it for posterity" (in Bunting, 1986, p.246). An apparent teleological conception of geography may be detected here. This may also explain the need to forge a link between geography and theology on previous occasions.

10.4 GEOGRAPHY AND BLACK EDUCATION

The above pertained to white education[3] only, and was meant to

[3]Blacks had no part in either the institutionalisation of geography or the establishment of the discipline at South African universities. However, within the context of this chapter it is

include English speakers as well as Afrikaners. As far as blacks were concerned, education was, according to Bunting (1986) to be based on trusteeship, non-equality, and segregation; its aim was to inculcate the White man's view of life, especially that of the Boer nation, conceived as the senior trustee. An assumption implicit in the I.C.N.E. report was that the world view of the Broederbond was to be imposed on the rest of the population. Although spokespersons for the newly elected Nationalist government tried after 1948 to distance themselves from the report, Bunting (1986) argues that the government itself proceeded with the implementation of the C.N.E. programme almost to the letter.

Whilst Afrikaners were seriously engaged in the decolonisation of education, and with it geography, vis-a-vis British control after 1948, they were at the same time set to impose an extraordinary recolonisation of black South Africa and the black mind. The development of apartheid brought not only a new system of social controls along race lines and new social fissures, but also a new brand of racial ideology. This involved a recolonisation of the mind, asymmetrically organised between blacks and whites. Education was restructured and if environmental determinism remained central to geography, the stage was nonetheless set for a reoriented "apartheidgeography"

The Government Memorandum on Education of 1839 stipulated a system of public instruction with the white colonists in mind.

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necessary to briefly reflect on geography and black education.

Elementary education for those who were not white was left to the various missionary societies. At most of the mission stations, apart from religious instruction, pupils were taught basic skills and a little handiwork. No set courses of instruction were followed, though there are indications that some form of geography was taught. When the Nationalist government took control of black education, the contents of subjects, like geography, were largely based on the syllabi that were in use in white schools.

With the passing of the Extension of University Education Act in 1959, for the first time provision was made for non-white universities. All black universities originated as constituent colleges of the University of South Africa in the early 1960s. Most of the lecturers appointed to the departments of geography at the black university colleges were graduates from the University of Stellenbosch or one of the other Afrikaner universities.

As shown in the arguments presented above, the geography current in South Africa at this time was one that was rooted in the European traditions of the discipline. This was the geography that blacks were confronted with. After a long history of an educational system dominated by foreign interests, and which was later more complicated by the introduction of apartheid, it becomes imperative that the decolonisation of education, and geography (the geographical mind) in particular, should receive serious attention. While realising that this dissertation is not

the place to come to final conclusions regarding a decolonised geography, it is, however, felt that on the basis of research to be published soon (Wesso and Parnell, 1992) it could provide the intellectual context for considering the decolonisation of the discipline of geography in South Africa.

The next section is, therefore, an endeavour to highlight some of the issues which ought to be considered in developing a "geography" more appropriate to the needs of the South African society.

10.5 **THE DECOLONISATION OF GEOGRAPHY**

The late nineteenth and early twentieth century eurocentric notion of geography, is still deeply entrenched in the minds of many teachers and academics alike. The legacy of that period remains in terms of philosophy, ethnocentrism, racism, and support for state activities expressed in geographical education. But apartheid is crumbling at the edges, and this has provoked a consideration of the decolonisation of the geographic mind.

In the late sixties and early seventies the overt environmental determinist focus of university geography syllabi was largely replaced by a conception of geography as a spatial science, inspired by developments within the discipline especially in the United States of America. Geography as spatial science was in various ways supportive of a utilitarian geography that still

buttressed a society built on inequalities of race, class and gender. It was largely a dehumanised and depoliticised geography - to such an extent that it tended to become irrelevant as an academic and political endeavour in which the oppressed of South Africa could engage. Various attempts were made to address the consequent sterility of recent geographic discourse in South Africa. Ten years ago, McCarthy (1982) invited geographers to engage in critical (marxist) debate. There was no substantial response. Others ventured to initiate relevant research projects, mostly informed by liberal perspectives regarding the socio-economic and political reality of the South African situation[4].

Recently, some geographers considered the decolonisation of geography, but mainly in terms of a "relevant research agenda (Crush et al, 1982; Wellings, 1986; Crush, 1991). Others have tried to focus on the extent to which the "masses", the "people", or the "oppressed" could contribute to a decolonised geographic discourse, or how they could be empowered to produce their own geographies (Crush, 1986; Wesso, 1989, 1991). Nothing substantial has crystallised as yet.

The colonisation process has been varied and very complex and the decolonisation process will have to be equally rich. Any contribution to the decolonisation of education, and scientific discourse, generally, will have to be tied to a consideration of the contribution we could make to critical thinking and empowerment. Two aspects seem to be of fundamental importance:

[4]For a review of literature see: Rogerson and Parnell (1989)

(1) geography will have to be Africanised, and (2) the current conception of geographical space will have to be reconsidered. Since an exhaustive discussion of this topic is beyond the scope of this study only a brief review of the issue is given.

For imperialism, white domination and capitalist exploitation to flourish, the colonised, the dominated, and the exploited had to be alienated from their indigenous culture and their past. The educational system was the most appropriate means to establish cultural and political hegemony, and geography had an important role to play in this regard. While South African society is currently in a process of radical transformation, geography will have to be radically transformed as well. Euro-American theoretical constructs will have to be carefully scrutinised and critically evaluated. The influences of Western society, imperialism and racism have been so entrenched in the South African lifestyle that most of the valuable aspects of African culture and experience have been undermined. The SA geographical environment (both human and physical), and geographical space and spatial phenomena in particular, are generally interpreted in terms of the legacy of imperialism and apartheid (Magi, 1990). Such interpretations are also rooted in theories and philosophies developed in Western, developed countries.

The decolonisation of geography in South Africa involves a deliberate effort to africanise the discipline and to empower people geographically. This should form part of the great challenge to transform the established academic culture in order

to meet the demands of a changing political and social environment and to reflect the changing power structure in society. The process of transformation within the South African context is denoted by the concept "Africanisation". As far as geography is concerned, the institutional structures as well as the practice of geography is completely dominated and controlled by whites. The concept of "Africanisation" recognises the imperative of transforming, not only the institutional structures of the discipline of geography in South Africa, but also the nature and scope of the discipline so as to more accurately reflect the national composition of the population. It is, however, not only about changing the racial composition of institutional structures, but also the curriculum and the whole way in which learning and teaching is organised. Geography and geographies have been socially produced to serve the needs of empire, capital and apartheid. People will have to empower themselves geographically and develop the conceptual tools in order to produce their own geographies. If the restructuring of apartheid space, for example, is regarded as important in a "new" South Africa, the conceptualisation of space needs to be seriously considered within the African context. Geographical space, like geographical knowledge, is socially produced, and is a direct result of material production. It is, however, more than this: the production of space "also implies the production of the meaning, concepts and the consciousness of space which are inseparably linked to its physical production" (Smith, 1984, p.77). Africanisation, therefore, also means the geographical empowerment of the oppressed and disadvantaged in South Africa.

People need to understand and realise their capacity to produce their own geographies. In this way a genuinely people's geography can be produced. According to Harvey, geography is "far too important to be left to generals, politicians, and corporate chiefs" (Harvey, 1984, p.7). The geography we have to develop must be a people's geography which is

> "not based on pious universalisms, ideals, and good intentions, but a more mundane enterprise that reflects earthly interests, and claims, that confronts ideologies and prejudice as they really are, that faithfully mirrors the complex weave of competition, struggle, and cooperation within the shifting social and physical landscapes of the twentieth century. The world must be depicted, analyzed, and understood not as we would like it to be but as it really is, the material manifestation of human hopes and fears mediated by powerful and conflicting processes of social reproduction" (Harvey, 1984, p. 7).

Our debates regarding the future of geography in South Africa must, therefore, reflect contemporary needs and challenges. In line with Harvey's (1984) historical materialist manifesto we must (1) build a popular geography which is free from prejudice but reflective of real conflicts and contradictions and which promote mutual understanding, (2) develop an applied people's geography, i.e. geography which is not supportive of narrow or powerful special interests, but which will be broadly democratic in its conception, and (3) accept a dual methodological commitment to scientific integrity and non-neutrality.

To conclude: It is suggested that an understanding of the history of geography in South Africa cannot be divorced from an understanding of the dynamics of the society in which it

functions. The Anglicisation, the Afrikanerisation and the Americanisation of geography, resulted in the total neglect of African needs and African culture. Any move to decolonise geography in South Africa should involve the Africanisation of the discipline and the geographical empowerment of the people. Precisely what this might mean and how it might be accomplished is a question of geographical practice as much as theory.

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APPENDICES

INTERVIEWEES

Barnard, W.S. (Prof)
Beavon, K.S.O. (Prof)
Booysen, I. (Mrs)
Daniel, J.B.M. (Prof)
Davies, D.H. (Prof)
Davies, R.J. (Prof)
de Wet, E. (Mrs)
Els, W. (Prof)
Fair, T.J.D. (Prof)
Ferreira, R. (Miss)
Hanekom, F. (Prof)
Hart, G.H.T. (Dr)
Hattingh, P. (Prof)
Hugo, M.L. (Prof)
Jackson, S.P. (Prof)
Jooste, P.G. (Prof)
Landre, M. (Prof)
le Roux, J.S. (Prof)
Louw, M.J. (Prof)
Mabin, A. (Prof)
McGee, O.S. (Dr)
Moolman, J.H. (Prof)
Nel, A. (Prof)
Rennie, J.V.L. (Prof)
Scheepers, G.H. (Prof)
Senekal, W.F.S. (Prof)
Smit, P. (Prof)
Smit, P. (Prof)
van Brakel, J.A. (Prof)
van Zyl, J.A. (Prof)
van Staden, M.P. (Mr)
Voordewind, W. (Mr)

PUPIL TEACHERS' GEOGRAPHY REQUIREMENTS.

The requirements in geography for the Pupil Teachers' Examinations to be held in 1905 will be as follows :—

First Year.—Africa, with South Africa in greater detail.
Second Year.—The British Empire.
Third Year.—The World.

There is no textbook which provides exactly what is wanted for the First Year's course. A good approximation, however, is the volume on *Africa* in Black's School Geography (1s. 4d.) which, however, would have to be supplemented in regard to South Africa. A very full treatment of the latter is given in Longman's *School Geography for South Africa*, 3s. 6d.: and teachers would do well to make use of it or of some other large textbook to supplement the book used by the pupil teachers.

For the Second Year the supply of textbooks is much better, but here again the volume in Black's School Geography (*The British Empire*, 1s. 4d.) seems most suitable. Teachers would do well to use Meiklejohn's *The British Empire* (2s. 6d.), which is very good, but too full for pupil teachers' use. Another excellent book, which might also be used as a reader, is Blackie's *Survey of the British Empire* (2s.); it is not purely geographical, but deals with history and commerce as well.

For the Third Year there is still greater choice. As Africa and the British Empire have already been studied, the quantity of matter in the *Elementary Geography of the World* in Black's School Geography is scarcely sufficient; but the contents of the book are of the kind desired, and the teacher can supplement them from the larger book on *The World* in the same series (3s. 6d.). Another excellent larger book is Meiklejohn's *School Geography* (2s. 6d.). Two other small books may be recommended—*A New Geography of the World*, published by Oliver & Boyd (1s.), and McDougall's *Outlines of Geography* (1s.). Both are notably inexpensive, and the latter is very attractively illustrated.

The *Advanced Atlas for South African Schools* (T. Nelson & Sons, 4s.) should be carefully studied throughout the course: and the study of geography should be made a live one by special attention to any regions which rise into prominence by reason of current events. The school library should be supplied with a good series of geography readers (Black's *Descriptive Geographies*, Nelson's *The World and its People*, Chambers's *Geographies of the Continents* and *Twentieth Century Geography Readers*, and Blackie's *Illustrated Continental Geographies* may be mentioned), and also with a good reference text-book such as *The International Geography* (George Newnes. 15s.), and a good atlas—*e.g.*, Newnes's *Twentieth Century Atlas*. The possession of these, however, is of very little advantage unless the pupil teachers learn to use them; the cultivation of an intelligent interest in geography, and of the habit of consulting books and atlases for information about places of current interest, is an important element of the training of pupil teachers in the subject.

The question of requirements in physical geography is under consideration, and an easy three-year course in that branch of the subject may be added to the syllabus as given above.

HIGHER EDUCATION;

ITS PRESENT DEFICIENCIES AND FUTURE IMPROVEMENT;

By Lt.-Colonel H. Elsdale, R.E., Natal.

The British Empire is tending steadily to become, and is certain to be in the future, an aggregation or union of self-governing communities, and among these the Cape Colony and Natal have taken their place by the introduction of Responsible Government. It is of the very first importance, therefore, that their Ministers and legislators should duly weigh the responsibilities of the position betimes, and take all such measures as will tend to educate the constituencies and the public generally, and enable them to take their proper place and efficiently perform their duties, whether as free and enlightened electors or legislators in a local self-governing community, or as citizens of a great world-wide empire.

In these measures the question of higher education is a leading item.

Unfortunately and unhappily, all our systems of education, whether in England or the Colonies, are behind the times. They are still trammelled by the traditions of the past, a past in which the legislation and fortunes of the Empire were in the hands of comparatively few men, belonging to a small privileged class; and, so long as these were educated to their duties, it did not much signify that the nation generally should be tied down to a narrow, unintelligent, and lopsided system of higher education, whether in school or university, calculated to turn out students learned, it may be, in Latin and Greek and in all the 'ologies, but ignorant of the fundamental duties of a citizen, and knowing little or nothing of the great questions, whether political, commercial, social, or economical, on which the fortunes of the whole Empire, for weal or woe, must inevitably depend in the future.

It is vastly to the credit of the London School Board that, as I understand, it is making an effort to get a little outside the old stereotyped groove of school education by introducing a more enlightened and intelligent study of the position and requirements of the whole Empire, and of each several part of it, South Africa included, as a regular part of the school curriculum in London.

It is before all things to be desired that the scattered local communities included in the vast British Empire should follow the example thus happily given them at the heart and centre of the Empire, and should set themselves on their side to widen the horizon of their children, and train them adequately for their future duties, whether as electors, legislators, or Responsible Ministers, by a corresponding widening of the scope and area of school education. Thus, while England is careful to train her children to a better knowledge of each distant colony and its needs, the colonies should apply themselves to learn more of the position and requirements of England, and of the great questions which must largely determine her future, and vitally affect the fortunes of all her colonies in the coming century.

It is submitted that, in some form or other, whether as a regular part of the school curriculum in ordinary working hours, or by special courses of evening lectures, the subjects of which the following is a rough syllabus, should be taught in the higher schools, in such brief outline only as will suffice to give intelligent boys a good grasp of general principles and cardinal facts:—

The Position of the S. African Colonies under Responsible Government, the relative functions of His Excellency the Governor and his Ministers, and their position in relation to Her Majesty the Queen and her Ministers, the position of Ministers in relation to the Legislative Council and Legislative Assembly, the position of the Judges as administrators of the law and not law-makers, the functions of jurymen as advisers and assessors of the Judge on questions of fact, but not on questions of punishment following on verdicts given.

The More General Position and Interests of the Cape Colony and Natal in relation to each other, to the Free State and Transvaal, Zululand, Swaziland, Basutoland, &c. The question of railway extension and harbour improvement as affecting the future of Natal. The question of South African federation, as following upon Canadian federation, now successfully completed, and Australian federation likely to be completed very shortly.

The British Power elsewhere in Africa.—The position and prospects of the Chartered Company in 'Rhodesia,' its relation to the Cape Colony and to the Crown. The position and resources of Nyassa-Land, and the new empire now opened up to us in Uganda: its importance as dominating the great Lakes and the upper waters of the Nile. The Niger Company and its claims, and the colonies on the western coast.

Every intelligent and educated white boy in Africa should know something of the above subjects; but every Briton in each remotest corner of the Empire should learn also the following:—

The Position of England in relation to Free Trade.—The general arguments in favour of Free Trade versus Protection—the result of Free Trade—to make England the workshop of the world, but to cause her growing millions to depend continually more and more on a world-wide commerce, and ocean-borne food supply, and naval supremacy to protect and secure them.

The Grave Responsibilities of England.—Her vast empire in India and Burmah, confronted on the north by the growing might and continual forward progress of Russia, and on the south by the aggressive policy of France in Cochin China and Siam. Her position in Egypt, astride of the neck which dominates the world's commerce from east to west, and secures her communications with India and the East: French claims and ambitions in Egypt: the alternative route to the East round the Cape of Good Hope.

The Past Position of England at the centre of gravity of the world's trade, as being located in the centre of the hemisphere of maximum land-area throughout the globe: her present position as injuriously affected by the Suez Canal, tending to an eastward-shifting of the centre of gravity: her future position when the Nicaragua Canal is opened to restore the balance between east and west, and place England once more at the centre of gravity.

The Position of England in relation to the War between Japan and China, and Russia's hold on the Amoor and Vladivostock: the probable awakening of the sleepy Empire of China caused by the war; the possible ruinous effect of that awakening on the commercial supremacy of Britain, when the iron, coal, cotton and silk of China are properly utilized, and her frugal and hard toiling millions brought into more intelligent and well directed industrial competition with the Western Powers.

Such subjects as the above are of the first importance to the future of the British Empire, including the Colonies, which must share in its prosperity or its downfall. But no intelligent grasp or all-round view of the real position of the Empire can be obtained without some insight into its position in relation to its environment. This involves the following additional subjects:—

The Present Position of the Continent of Europe, as dominated and controlled by two great standing antagonisms—the antagonism of France and Germany in respect of Alsace-Lorraine and the 'revanche,' and the antagonism of Russia and Austria in respect of the Balkan Peninsula and the hegemony or leadership of the Slavonic populations outside Russia Proper, with a third and lesser but important antagonism between France and Italy in the Mediterranean. The effect of these three standing antagonisms, to divide Europe into a central coalition of Germany, Austria and Italy, against France and Russia. The net result—to turn all Europe into a vast camp with steadily growing preparations for war on every side. The position of the neutrals, the well established and well defended neutrality of Switzerland, and the more precarious position of Belgium and Holland.

The Position of France, astride of two seas, looking northward and westward on the Atlantic, and southward on the Mediterranean, with an industrious, highly intelligent, and frugal population, but a gigantic debt, due to the extravagance of the Republic. Her failing population, which, after a whole century of continuous and nearly uniform decline, has now reached the point where the death-rate has overtaken the birth-rate, so that unless this long experience is to be reversed, her population will continue to decline henceforward. Her huge army recruited up to the maximum limit: her vast ambitions beyond her present powers, which have led her, by a Russian alliance, to seek to wed her failing numbers and stationary strength to the inexhaustible fertility and growing might of the young and vigorous Slavonic race.

The Position of Russia.—The age-long ambition of the Czars, an expansion towards the sunny south, an outlet to the southern seas, in the possession of Constantinople: the more modern and recent Pan-Slavic movement: the Russian conquering march across northern Asia, and its bearing on the peace of India and China southwards: her high birth-rate and vast population, increasing over two millions a year, and its threatening aspect for the future of the western powers. Its probable higher rate of increase in future, whenever, by improved sanitation, the present excessive death-rate is reduced. The bizarre and extraordinary alliance between an autocratic Czar, the personification of conservative despotism, and a Republican France largely influenced by atheistical and revolutionary elements.

The Position of Austria-Hungary.—A dual or bipartite empire, threatened with disintegration, both from within and from without: from within by the struggles of composite and clashing nationalities, from without by the aggresive designs of Russia. Austria, embarking upon a Home Rule policy to reconcile the conflicting claims of German and Magyar, has committed herself to a thorny and perilous path in which she can neither go forwards nor backwards without grave dangers. The rapid increase and growing power of her Slavonic population is an important factor. They are gaining on the Magyar and German elements, and clamouring for their share of Home Rule. Austria stands committed to oppose Russian propagandism and Russian supremacy in the Balkan Peninsula, for, if she once allowed the Russian hegemony to be declared, the attractive power of a half-realised Pan-Slavic ideal would be so great that her own Slave populations would soon follow suit, which would mean the final ruin and break-up of her empire.

The Position of Germany.—Committed to support Austria as against Russia, knowing that, if once she allowed Austria to be cast down, her own turn would infallibly come next, and desiring Austria's support as against France.

The Position of Italy.—Committed, as a growing maritime power, to oppose French designs to predominance in the Mediterranean, and driven thereby to join the Central Alliance. Her financial state on the verge of bankruptcy, due to an overgrown expenditure on armaments.

The Position of England.—In face of the very threatening European situation, committed to a benevolent neutrality towards the Central Alliance by the antagonism between her interests and French claims or Russian designs. Her neutral attitude as desiring to steer clear of the Continental embroglio if she can. Her friendly attitude towards Italy as desiring to support her, and receive her support, in the Mediterranean, to prevent the French from turning it into a French lake.

The Position of the United States.—Happily clear of European complications: the growing *rapprochement* between England and her eldest daughter, as shewn by recent arbitrations for the settlement of disputes, and by the very friendly tone of the leading American literature generally.

Lastly, comes *the great question of the Federation of the Empire*, with or without the admission of the United States, into a great Pan-Anglican or Pan-Anglo-Saxon Confederacy. Its beneficent effect on the peace of the world and the fortunes of mankind. The federation of the Empire is called for at present by the necessities of its defence, demanding a supreme navy which, as the Colonies share in its benefits, it is unfair that England should provide alone, so that Australia has already taken her share. Representation goes with taxation, and if the Colonies are to bear their share of the expense they must also have their fair share in the councils of the Empire, which can only be attained by Federation in some form.

These are the great questions which must largely determine the destinies of the nations in the coming century. They are all-important to the future of the British Empire, and will powerfully influence that of the whole human race. It is here argued that it is preposterous that we should teach boys at a high school Latin and Greek and mathematics, and leave them in ignorance of all such subjects as these which are necessary to fit them for their position as citizens, electors, or possible legislators, in a world-wide Empire.

[redacted] of teaching the pupils the[redacted]

[redacted] Much can be done by an intelligent teaching of [redacted]. For it will be noted that a great deal of the [redacted] above is covered by, and comes properly within the province of, an enlightened geography lesson. Thereby the dry bones of geography will be clothed with a much more attractive skin, and the geography lesson will become far more interesting to the boys, and will be much better assimilated and remembered.

[redacted] Something, also, can be done by an intelligent teaching of [redacted], for the history [redacted] the [redacted] Thus, when the reigns of Queen Elizabeth and her successors are under consideration, the doings of Raleigh, Drake, Hawkins, Frobisher and Cook—those bold mariners who presided over the dawn of our Colonial Empire—should be explained and illustrated by the maps. The teacher should read in this connection such a work as Professor Seeley's Expansion of England, and give the pupils a short summary of the leading points derived from his study of it.

Again, when, in George the Third's reign, the American War of Independence comes up, the difference between the narrow and illiberal colonial policy which caused that unfortunate war with the resulting separation of the United States, and the modern colonial policy of Great Britain, adopted since the bitter lessons of that struggle were digested—and the results of this more liberal policy in the subsequent vast and peaceful expansion of the Colonies—should be passed in review.

([redacted] Those parts of the above subjects which do not come within the legitimate province of the ordinary lessons in Geography and History can be taught, and the whole of the subjects further explained and brought together in their proper political connection, by [redacted] to the pupils, or afternoon lectures after [redacted] winter. These lectures, if well handled by a competent lecturer, would be most interesting to the boys, and would be an agreeable interlude to the somewhat dry, and to many boys, dreary monotony of their ordinary studies.

A competent and well informed headmaster could not possibly employ his time to better advantage than by preparing and delivering such a course of lectures in the dark winter afternoons. Or, if the headmaster or his assistants be unequal to the task, a specially qualified and competent lecturer could perhaps be found outside the college altogether.

The whole of the above subjects, within the limits contemplated here, could be brought well within the compass of a course comprising an afternoon lecture once a week for three months in the winter. But, in order to aid the lecturer, and lay a good foundation for a better and more permanent knowledge of these subjects, [redacted] leading political issues.

In order to explain the limits within which instruction in the above subjects should apparently be confined, whether in the geography and history lessons, or lectures as suggested, and the way in which intelligent students may be expected to correct, expand and supplement their then acquired foundation knowledge in after life, by an enlightened reading of the newspapers and current literature of the day, I may perhaps be permitted to give an illustration.

Suppose a paragraph were to appear in the Continental intelligence in the Home newspapers to the effect that one of the leaders of the young Czech party in Bohemia, such as Herr Teckly, had been making another very violent attack on the Government in the Austrian Chamber of Deputies, and that this party is likely to carry the next elections against the Government, by a large majority.

We may safely, perhaps, conclude that such a paragraph would be passed over summarily by nine out of ten of all the best educated people in South Africa as uninteresting and dull. It is, in fact, more or less meaningless to them, because they have never had at school, or acquired in after life, the cosmopolitan knowledge of European politics necessary to appreciate it. Now no one would, it is hoped, be so foolish as to pretend for a moment that we ought to waste the precious time of boys at school in teaching them anything about the young Czech party in general, or Deputy Teckly in particular. Nevertheless, we should teach the students, as part and parcel of their [redacted] on Continental Europe, that the Austrian Empire (see the syllabus above under Austria) is a congeries of diverse races, held together under the same flag by loyalty to the House of Hapsburg and by the army. Also, that it is athwart the stream of modern progress, which is setting steadily in the direction of centralisation, and the aggregation of race nationalities into one empire—see the cases of the American War of North versus South resulting in the consolidation of the United States, and the more recent unification of Germany and Italy. The students should learn that the Czechs in Bohemia, among others, are rising and troublesome young nationalities, clamouring, and likely to clamour, for their share in the Home Rule which the Emperor has already been driven to concede to the Hungarians. Then those of these pupils, in after life, who may have any turn for politics, or any mind to read the newspapers intelligently, will not be slow to note and understand such a paragraph as the above, which would mean that the Emperor of Austria was in a fair way of being forced to divide up his Empire still further by fresh concessions of Home Rule to the Czechs and other similarly situated nationalities, or else by refusing it, to bring on a dangerous political crisis which might strain the allegiance of these aspiring young races to the breaking point, and drive them to transfer it to the Czar, or declare themselves independent.

Similarly, for all the other subjects above, a good foundation knowledge only should be aimed at at school, calculated to fit the student in after life for acquiring readily that further and more extended knowledge necessary to make him a well informed man of the world, or possibly an accomplished legislator and statesman.

[redacted] Its precise limits and the best mode of teaching all such subjects is a matter which should be left to the discretion of an able and well-informed Head Master, but that mode should be one well calculated to stimulate and guide the *imagination* of the boys.

It is one of the most glaring drawbacks to our modern system of so-called education that while it cultivates the memory, the observation, and the reasoning faculty, it largely neglects that whole large side of human nature represented by the words imagination and sentiment, ignoring or forgetting the supreme importance of directing these aright.

For, after all, whatever a cold and rigid political economist, trained in the school of Stuart Mill may say, sentiment and imagination rule the world, and are at bottom the most potent engines in human struggles and human progress.

If any one doubts this let him look at the list of important questions which we have given above, wherein he will find that these are really the ruling factors. It is the highly strung sentiment and imagination of the French, fired by the afterglow of Napoleon's victories, which still blinds the eyes of every Frenchman, that prevents them from accepting the well established results of 1870, and keeps all western Europe in a state of unrest, until Alsace-Lorraine be

re-fought for. It is the widespread and powerful sentiment in Russia represented by the word Pan-Slavism which is a ruling element in the unstable equilibrium of Eastern Europe at this moment. Similarly, it was the power of the imagination, and the fascination of the unknown, which drove those hardy old English mariners, whose names I have quoted above, to exploration and conquest in every distant sea, and without that cogent impulse our vast Colonial Empire, including the South African Colonies, would never, in all probability, have existed.

I repeat that it is of supreme importance that higher education should be specially directed to stimulate, inform, control, and direct aright the sentiment and imagination of the young.

And herein we are brought especially to the spirit in which history should be studied and taught. The great deeds of our forefathers, who laid the foundations of this Empire, now grown so vast, with toil and sweat, and cemented it together with their blood, should be reverently dwelt upon, that these students, their descendants, may be encouraged to bear their part worthily and well in taking up the great work and carrying on this Empire to still higher stages of dignity and renown.

All this becomes much more important when we consider the sordid and utilitarian tendencies of the age, its increasing luxury and mammon-worship. There is the greatest danger that the souls of our boys will be buried in later life in money-grubbing, in the pursuit of ease and pleasure, that they will be enervated by a sickly over-strained humanitarianism and effeminacy which shrinks from toil, hardship, and danger, or carried away by dangerous atheistical and revolutionary movements, unless we are careful to imbue them betimes with higher ideals and nobler aims.

Above all, we should be careful in dealing with History to inculcate the notion of duty, duty to God, and duty to man, as the ruling principle. For it will not be denied by any thoughtful and well-informed moralist, that those besetting tendencies of the age just mentioned, and other collateral tendencies, especially the democratic spirit of individualism, whereby the man and his individual and personal interests are being continually exalted at the expense of family, national, or patriotic obligations, are tending steadily to undermine the spirit of duty.

To sum up, then, it has here been argued that beyond and above any question of Latin, Greek, French, mathematics, or science, it is of far more importance that our higher schools, and all our schools, should set themselves to train up a race of well-informed, patriotic, and enlightened citizens, who know something of the history, the present position, responsibilities, and requirements of the Empire, who are prepared to do their part worthily and well in carrying it on in the future, to fear God and honour the Queen in the devout spirit of their ancestors, and to set the spirit of duty to God and man always before their own personal and selfish interests.

H. Elsdale.

SPECIAL EXAMINATION ON THE GEOGRAPHY OF THE BRITISH EMPIRE.

(For the Victoria League Prizes and for the Cape Town Duke and Duchess Prizes.)

Three Hours Allowed.

All competitors who have passed Standard VI. are asked to take the Senior Paper; those who have not passed Standard VI., the Junior Paper.

I. SENIOR PAPER.

[*N.B.*—Answer fully Questions 1. Answer also any *three* of the remaining questions.]

1. Describe a journey round the Empire, commencing at Cape Town, and returning to Cape Town.

2. Describe a railway journey either (1) from London to Edinburgh, or (2) across India, or (3) across the Dominion of Canada.

3. Give an account of an imaginary visit to Malta, or to St. Helena, or to Ceylon. [Do not describe the voyage to the island you select: begin with the landing.]

4. Give a short account of the origin and history of the Colony of New South Wales, and describe the capital of the Colony, mentioning to what other ports it has a direct steamship service.

5. Give an account of Newfoundland, including a reference to (1) its discovery, (2) its acquisition by Great Britain, (3) the French shore, (4) the Great Banks.

6. What British possessions lie on or near the steamship route between Cape Town and Southampton? How did each of them become a British possession, and what is the use of each?

7. What is (1) a self-governing colony, (2) a Crown colony, (3) a dependency? Mention an example of each.

II. JUNIOR PAPER.

[*N.B.*—Answer any *four* questions.]

1. Describe a railway journey from Cape Town to Port Elizabeth, mentioning the towns passed, the nature of the country, and anything else that you consider important.

2. What would a visitor go to see (1) at Simonstown, (2) at Stellenbosch, (3) at Kimberley, (4) at Grahamstown?

3. Draw a map of the Cape Colony, showing the principal mountain ranges and rivers (with their names) and marking the railway lines and the most important towns on them.

4. Name the Australian colonies and their capitals, and say what are the chief industries of the different colonies.

5. Tell where each of the following towns is situated, and say whether it is larger or smaller than Cape Town: Melbourne, Glasgow, Demerara, Toronto, Durban, Sydney, Calcutta, Dublin, Bulawayo.

6. Tell what you know about New Zealand, under the following heads:—(1) people: (2) climate: (3) scenery: (4) the principal towns

SYLLABUSES OF INSTRUCTION IN GEOGRAPHY ISSUED BY THE ROYAL GEOGRAPHICAL SOCIETY.

I.—IN ELEMENTARY SCHOOLS.

A. PRELIMINARY STAGE.

For Children between Five and Eight Years.

At this stage children listen with eagerness to narratives of adventure by land and sea, to the tales of travellers in Australian or Asian deserts, or in the Arctic Ocean; to stories whose scenes lie on coral islands or in tropical forests; to accounts of combats with tigers, lions, and other wild animals; to tales of heroism and endurance in face of danger; to descriptions of the appalling effects of volcanic outbursts, earthquakes, cataracts, floods, and similar incidents. For this purpose, it is best to make use of suitable extracts from books of famous travellers — Livingstone's adventure with a lion; McClintock's account of the last of the Franklin Expedition; Wallace's description of the mysterious sounds of the tropical forest; and similar famous narratives. Sometimes the readings may be from cuttings from the daily press, but these will have to be chosen with care.

The readings should be accompanied by simple explanations of geographical terms used in the narratives, and descriptions illustrated by models, figures made with the aid of sand-trays, etc., and the children themselves should be practised in modelling. But the teaching of geography at the first stage will have fulfilled its main purpose if it has been attractive, and has made the children think of other countries besides their own.

B. FOUNDATION FOR SYSTEMATIC STUDY.

Children between Eight and Eleven Years Old.

The Necessity for Maps.

It is a serious difficulty in geography that the mind has to deal with facts that cannot be directly observed. The relations of places hundreds of miles apart, and separated by surfaces of very diverse character, have to be grasped in a single mental operation, but the observations by which these relations have been determined can be made only piecemeal, and only in a few cases by any one individual. Hence arises the necessity for representing on a map the facts of nature which are the real subjects of study. It is very important, therefore, that the learner should be brought to realise two things: first, that geography is actually based on the observation of nature; and, second, how the map is connected with such observations, and may be made to stand for an extent of ground that no individual can directly observe. This can be done to a large extent at this stage.

Observational preparation with a view to this necessity.

With this object in view, it is of vital importance to lay a foundation for geographical teaching on the actual observations of the children themselves. Children will, in the course of their observations, become acquainted with the methods of recording what is observed on maps, and they can be brought to see how this third function of geography determines what we try to express on maps. Though the observations of children can be made only in limited areas, the observation of such areas is as much a function of geography as that of the most extended areas, and the method is the same with the big and the little.

Opportunities should certainly be found for making a number of observations that will ultimately lead up to a just appreciation of the value of maps and of what is expressed on maps. The teacher will bear in mind that whatever affects in a constant or more or less regular manner the value of local conditions and place relations is a fact in geography, but he will, of course, direct special attention to those facts which are most wide-reaching or otherwise most important in their effects of that nature. Children, whether living in town or country, can have things pointed out to them at school: they can look at things on the way between school and home: they can make short expeditions: and they can make "school journeys." The nature of the observations that can be made will differ greatly according as a child lives in town or country, and as the majority of English children are town children, it may be useful to begin by considering what can be observed even by children in towns.

Geographical Observations within the Reach of Town Children.

Use of the Globe.

From the first children should be made familiar with the globe, which has the advantage of making intelligible a number of observations which even town children can make for themselves. For example, they can be made to understand the apparent movements of the sun. Even in London the sun shines often enough in a school year to make it possible for a teacher to connect both its daily and annual apparent movements with the actual movements of the Earth as represented by a globe. Some method should be adopted for indicating the direction of the zenith on any part of the globe, such, for example, as a strap with a few pins stuck vertically in it. Putting this strap over the most northerly point of the ecliptic would enable the teacher to show where a person standing there would have to look for the sun at midday at the summer solstice, and shifting the strap to the latitude of the observer, he would then be able to show the difference in the direction of the zenith at his standpoint. In the absence of a regular quadrant, the same strap might be made use of at a later stage to show why, in sailing, say, from Vancouver to Yokohama, you begin by steering in a northerly direction.

The Idea of Direction and its Representation on Maps.

Further, town children equally with country children can acquire from their own observations the idea of direction, and can be shown how direction is represented on a map. Streets serve this purpose as well as roads. Certain streets can be selected as peculiarly fitted to show the relation of certain directions to the position of the sun. In the case of streets running east and west, children can see for themselves that through out the winter and for the greater part of the day in summer the shadows are always on one side of the street, but vary in direction at different hours. They can see that about 12 o'clock the shadows are at right angles to the street, and with reference to that the convention by which directions are represented on maps can be explained to them.

Differences in Elevation and the Modes of Representing them on Maps.

In the great majority of cases town children can also be taught to understand, with the aid of their own observations, the importance and the mode of representing differences of elevation on maps. Most towns have sloping streets as well as level or nearly level streets. This distinction cannot be too strongly insisted on or too often repeated. The fact referred to is one of the most important of those which modify the value of horizontal place relations, and has thus had a marked effect on human development from the remotest prehistoric times to the date of the latest inventions. Therefore, though it may be long before children can grasp all the significance of differences in altitude, every effort should be made to get them to notice these differences, and why and how we try to indicate them on maps. Now that so many children cycle, it should be easy to bring home, at least to such as do cycle, some idea of the importance of the distinction. On a level, smooth and hard-surfaced street, all that has to be overcome by the cyclist is air-resistance and friction, but where there is the slightest upward slope, the cyclist at once feels the effect of having to lift both himself and his cycle. If there are steep streets in a town, children can see for themselves how horses have to strain themselves in pulling uphill. On some parts of the tramway lines they can see that extra horses have to be used, and the cost of that will be readily understood.

The importance of such facts being in some degree grasped, children will then be interested in learning how they are indicated on a map. With the aid of their own observations they can be most easily taught to understand contour-lines. In a fairly steep street, the boys might be taught to mark off approximately the points in that street at intervals of 3 or 4 feet in height. Let one boy stand erect at the bottom of the street, and another balance on his shoulder a straight, uniform stick. Looking along it up the street, the latter will be able to direct a third to stand with his feet at the level of the first boy's shoulder. The opposite side of the street will probably be at the same level, and the line joining these will be part of a contour-line at a level above the starting-point equal to that of the first boy's shoulder. With this basis of observation, the meaning of contour-lines and other modes of indicating surface inequalities can be expounded with some chance of their being properly apprehended.

Rivers as hindrances to communication.

Where there are rivers, the teacher can show how they prevent communication by land except where they are bridged.

Water as a means of facilitating communication.

This shows them how water may hinder communication; but they can also learn at river-banks or on ponds in town parks how water may also assist communication. If a boat is afloat, the smallest child can learn that he can move it with a touch of his finger, whereas he will find that a good deal of strength is required to move it when it is drawn up on shore. From that alone he will get some idea of the advantages of rivers, seaports, and canals.

Physical Changes modifying the value of local conditions and place relations.

Many of the important changes which regularly or from time to time modify the value of local conditions, and even place relations, can also be observed in towns. Children can, for example, be taught to notice the rise of water and its rapid flow in gutters during heavy rains. There are very few towns in which it is not also possible for them to observe the effect of long-continued rains in raising the level of a river; but even where that is not possible, their observations on gutters may lead them to that idea. They can see the mud in rapidly running water, and see how it is deposited in the streets when the rain is over. They know that in wet weather they cannot cross certain parts of a public park which they can freely walk over when it is dry.

Town children know also the difference between winter and summer, and could be made to observe that some plants do not thrive in cold summers. They know, also, that even in summer plants are apt to wither in droughts unless they are watered. They may therefore be taught that where both warmth and moisture are found, vegetation is likely to be abundant and varied. So, also, they can learn from observation the advantages of a southerly aspect.

Further, they know the difference, or at least can be taught to observe the difference, between cold and warm winds, and could also be got to observe the advantage of shelter from cold winds.

Evidences of Interchange Products.

Then town children know that things are bought in shops, and that some of these, eggs, milk, butter, flour, fruit, come from a distance; and even London gardens and parks may assist in giving them some idea of the different aspect presented by the districts in which such things are produced from that of the town in which they are sold.

Observations more easily made by Children in the Country.

Use of the Compass.

Children in the country generally have the opportunity of making shorter or longer walks amidst varied features. The use of the Compass can be learnt in towns, but it can be more fully demonstrated in such walks. Children should learn to take the bearings of objects from the tops of hills, and to plot their observations on paper.

Comparison of Ordnance Maps of the same district on different scales.

Work of this kind should be aided by ordnance maps of various scales, and great pains should be taken to get the children to understand the different degrees of generalization in the representation of the country on different scales. The same means of comparison will serve to show the ratio of the horizontal scales to the areas represented on different scales on maps of the same size. On the more comprehensive smaller-scale maps, parallels of latitude and meridians are of course marked, and the practical use of a knowledge of latitude and longitude in indicating positions may be explained before the study of mathematical geography. With the aid of a contour map a relief map of the district may be constructed, without which the surface of a region as a whole can hardly be adequately comprehended. The frequent attention, in the course of walks, to river-banks and hill-sides will lead to the observation of the flow of water and the way in which rivers hollow out valleys, receive tributaries, and spread out mud into plains. Special attention should be called to such actions of rivers as tend to modify their value for man. On the one hand, the great fertility of flood-plains should be pointed out; but on the other hand, children should be taught to notice that deposits make rivers shallower in different places, and thus made to understand why constant dredging is required to keep navigable channels clear.

Connected with the observation of wind, the formation of mist, cloud, and rain should be noted. Quarries and railway cuttings will reveal variation of soil. It should be pointed out that woods, scrub and marsh, grassy meadows, cultivated lands, and varied types of agriculture depend on configuration, soil, and local climate, and their position should be shown on the maps made by the children. There may also be opportunities to show the connection between local conditions and other industries than agriculture. In some cases it may be found profitable to study, even at this stage, the parish boundaries with some care. Historical remains should, of course, be examined. Children should learn to trace the course of roads and railways from place to place, and to note where bridges are needed, where embankments, where steep gradients are avoided or necessitated, where "saddles" in a range of hills form a pass, where roads are made to deviate in order to avoid steep gradients or to reach the easiest saddle or the most convenient bridge; and on this part of the work great stress should be laid. Such information, if obtained first-hand, renders the description of foreign lands and their products a subject for reasoning, not for mere memory.

Systematic Study of Geography with Maps as a Basis.

By such observational work as has been indicated, the child will be brought to understand the relation between maps of different kinds and the region which they represent. Further geographical knowledge must be built up on maps as a basis. From the necessities of school-life, this further knowledge must be acquired concurrently with that which is gained by observation.

From the study of their own parish, children may rise to that of their own country or some well-defined geographical region. At this stage, some general knowledge of the continents, and of the relative distribution of land and water, should also be acquired.

In the study of maps, the same ideas to be emphasized as in observational work.

In work based upon maps, it is important to remember that prominence should be given to the same ideas as are emphasized in the observational work. Unless that is done, the observational and practical work is thrown away.

This consideration determines the point of view in the study of physical features. In our own country, at least, mountainous and even hilly regions must first of all be thought of as having very few inhabitants. The pupils must learn that the great bulk of the population live in the low grounds.

Mountain and hill ranges to be considered first as hindrances to communication.

Where mountains or hills separate low grounds, they should, therefore, be regarded as a hindrance to communication between the people living on opposite sides.

River-basins.

Some river-basins will be found specially worthy of study, and the main facts connected with two or three of those in our own country are of a kind that can be grasped even by children under eleven. It will be pointed out that the importance of a river-basin is not confined to what determines the direction and volume of the rivers. It should also be noted that where the country has varied surface features, the general slope of the land is more or less in accordance with the flow of the rivers, so that roads and railways run in much the same direction.

Importance of rainfall and temperature.

The importance of rainfall and temperature with respect to agriculture, and of facilities for mining and manufactures, will, of course, not be overlooked.

Even in the most elementary study of continents, emphasis should be laid on the great facts that affect the distribution of population. For this reason it is sometimes important to note that rain does not fall everywhere at all periods of the year, as in our own country, but is mostly confined to certain seasons. In the case of Asia, it should always be noted that throughout the south-east the rains are very heavy in summer, and that for that reason enormous quantities of food are grown there, and that a comparatively small part of that huge continent contains the great bulk of the population.

Pictures.

At this stage much more use may be made of wall and lantern pictures, but it should be remembered that they are distinctly harmful if they cannot be made to illustrate the value of local conditions or place relations. Thus, a view of Glasgow cathedral may be of use if the children are at such a stage as to appreciate the circumstances that favoured the spread of Gothic architecture in a certain region; but if it is shown merely as the picture of a building in a particular town, it does not instruct, but serves only to burden and confuse the mind.

C. CHILDREN FROM ELEVEN TO FOURTEEN YEARS OLD.

Observational Work.

In one important particular observational work may be carried further at this stage, and in this particular town children may even be said to have an advantage over country children. The observations referred to are those on the convergence of street traffic.

Convergence of Traffic.

Town children know the difference between main streets and by-streets. They can easily be taught the advantage of a corner shop. In London the importance of such centres of convergence as the Bank of England and the Elephant and Castle can be brought home to them. When they pass from what they can actually see to what they are obliged to imagine with the aid of a map, it is only one step from this idea to that of a town looked upon as a centre of trade.

Bridges.

In London, Glasgow, Bristol, and other towns, children can be made to observe the special importance of bridges at the lowest point where a river can be bridged. They can be made to see how not merely the traffic that goes more or less directly across the river, but also a great deal from points downstream on one side of the river to other points downstream on the other side of the river is brought to a bridge so situated. They can thus be brought to appreciate the special importance attached to such points of convergence.

Systematic Study of Various Parts of the World at this Stage.

In drawing up syllabuses for this stage, it is not desirable to attempt to fix any hard-and-fast lines either as to the scope of the syllabus or the order of presentation, but it will, no doubt, be generally recognized that such a syllabus ought to provide at least for a general knowledge of the distribution of land and water, rainfall and temperature, and the main characteristics of the continents, and a more detailed knowledge of the United Kingdom, the more important parts of the British Empire, some of the countries of Western and Central Europe, and of the United States.

The important thing, however, is to note the main facts on which stress should be laid in the study of any of the regions mentioned. The necessity for calling attention to the agricultural and mineral resources of any country or region need not be emphasized. Such points are never overlooked, and perhaps the only suggestions that need be offered under these heads are that due emphasis should be laid on the most important of such resources, and that in many cases precision is a matter of importance with regard to the situation of minerals. There are, however, one or two other points to which it may be worth while to direct the attention of teachers at greater length.

Detailed study of Physical Features. Importance of the lowest points and lines in mountainous and hilly country.

At this stage the study of our own country will under every head be more detailed than at stage B. There will accordingly be a more detailed study of the physical features, and under this head the teacher, keeping in mind the goal of the study of geography—the estimation of the value of local conditions and place relations—will direct attention, not to the highest points of mountain chains or ranges of hills, but their lowest points, or at least those points which make them less of a barrier to communication between opposite sides than otherwise they would be. In the case of the Pennine Chain, for example, Cross Fell and the Peak need never be mentioned, but attention should be carefully and emphatically drawn to the lines along which the easiest communication is established between such towns as Leeds and Manchester. There can be no geographical study of the means of communication in a country unless these are studied with reference to the physical features. Important deviations from the main route brought about by the character of the physical features, should be carefully observed; and this by constant repetition should be so thoroughly instilled into the minds of boys and girls, that they should come to feel it to be as absurd to draw a railway (say) from Exeter to Plymouth as running over Dartmoor, as it would be to try to find the square of a number by dividing instead of multiplying. Ordinary railway maps, without physical features, such as accompany the official time-tables of the railway companies, may be found of great use in calling attention to the point here insisted on.

Climate.

Boys and girls will now be better able to understand the laws affecting climate, and hence to get a firmer hold of the main facts under this head. They have already learnt by observation that winds bring with them, not only rain, but also heat and cold. They must now learn to read their physical maps in the light of that and other facts.

Effect of Physical Features on Rainfall.

As to the rainfall they must learn that mountains have a great effect in causing water-vapour borne by winds to take the form of clouds and rain. But they must never be allowed to think or say that mountains or hills attract clouds or rain. They should be brought to understand that the effect of mountains in causing clouds and rain consists in forcing the winds upwards, so that the air, exposed to less pressure, expands and becomes cooled, in consequence of which the moisture is condensed first into clouds and then into rain. To speak of mountains as attracting clouds or rain not merely introduces a false idea, but is apt to prevent the entrance of the correct idea. It is apt to blind the learners to the fact that mountains promote rainfall chiefly on the side directly exposed to the moisture-bearing winds, not on the lee side.

Effect of Physical Features on Temperature.

Boys and girls have also learnt by observation that a row of houses, or even a wall, may afford some protection against cold north or east winds.

That will enable them to understand that ranges of hills and mountains may afford a still more effectual protection against cold winds, and they should be able to pick out on their maps the parts of the British Isles which are most likely to enjoy that advantage. They will readily understand that winds that blow from the north are likely to be cold, and those from the south warm, and the teacher will not omit to explain why maritime regions in the northern hemisphere exposed to south-westerly winds are likely to have milder winters and cooler summers in consequence of that situation.

Climatic differences between our own Country and other parts of the World.

In teaching the geography of other countries than our own great pains will, of course, be taken to get the children to realize that they differ from our own in climate in various ways. The observations on the sun, expounded with the aid of the globe, will enable them to see how some countries get more heat from the sun, and others or parts of others less than our own. The fact that there are some countries with perpetual summer should not be difficult to seize. On the other hand, in describing many parts of the Earth, it will be necessary to point out how the value of extensive areas is greatly reduced by their high altitude, and the low temperatures resulting therefrom. Where the lesson deals with a country which differs from our own in having a well-marked rainy season, whether in summer or winter, alternating with a season of little rain, great stress should be laid on that fact. If the explanation is of such a nature that it can be grasped by children under fourteen it should be given. But even if it is not, the distinction of rainy seasons is one that is important to emphasize with a view to the fundamental geographical idea which must be impressed on them by every means. Even if the cause cannot be understood, the effect of winter or summer rains, as the case may be, in modifying the value of other local conditions, should never be overlooked.

The Position of Towns.

The study of the physical features with special reference to the means of communication will, in many cases, throw light on the position of towns, and afford the best means of fixing that position in the memory. When towns are related to any well-marked physical features, this should always be pointed out, and in some cases, when that relation is once perceived, the precise position can hardly be forgotten. This, for instance, can be confidently asserted of Carlisle when once its relation to the valleys of the Irthing and Tyne, the Eden and Petterill, has been perceived. And when such relations are noticed, the town boy, who has observed the importance of such a point of convergence as the Bank of England, may be able to perceive how long streets or roads running through natural furrows on the face of the country and meeting at one point, give more or less importance to that point. In any case it should be remembered that a truly geographical account of what gives importance to towns must refer first to conditions that were present before the town was there, not to things that have been made by man because a town had already acquired importance. Some such things are, indeed, rightly referred to secondarily. Railways, for example, are in most cases made to towns because the towns are already important, but once made they add to the importance of the towns to which they run.

Convergence of Traffic at the Mouths of great Rivers.

At this stage a boy or girl will be better able to appreciate the ultimate importance of the fact pointed out under stage B as to the direction of the main roads in river-basins with well-marked physical features. They will be able to understand how this tends to concentrate a large amount of traffic at the mouth of the main stream, and therefore to contribute to the importance of any seaport that may exist there.

Connection between Geography and History.

Before they have reached the end of this stage, boys and girls should be able to understand something of the influence which geographical conditions have exercised on history. Those influences are too manifold to be summarized, and can only be briefly indicated. Regions on which local conditions have conferred special advantages are apt to be coveted by stronger powers than those to which they belong. Local conditions, in various ways, mark out the routes by which they are invaded by foreign armies, and such routes are in many cases the same as those followed in peaceful commerce. Illustrations may be taken from many parts of the world, but none, perhaps, would be more instructive than that which is offered by Egypt, a country which presents a striking example of the value, not only of local conditions, but also of place relations, and of the mode in which the value of both may be modified by different circumstances. We have here a valley, the bottom of which is entirely composed of a fertile mud-plain, bordered by elevated deserts. The temperatures are high enough to allow of cultivation all the year round. Every year inundations supply the necessary moisture, at least during the colder months of the year. This moisture suffices for the less valuable crops. In modern times the value of the local conditions has been greatly enhanced by the extension of the area that can be supplied with moisture during the warmer months of the year, and thus rendered available for the cultivation of the more valuable crops. Even in ancient times, however, the valley was always extremely productive and very populous. It has hence been frequently invaded, and in the course of history has fallen under the dominion of many powers. It was coveted, not merely on account of its local advantages, but also because it lay on a great trade route. Frankincense, ivory, fine woods, spices, and other valuable commodities were from time immemorial introduced into the Mediterranean region, partly by way of the Red sea and through Egypt. For hundreds of years, however, the discovery of the sea-way to India greatly reduced the value of the relation of Egypt to the countries producing some of those commodities; but again in modern times Egypt has been placed on a great trade-route between the East and West, a route on which the trade is once more of the highest consequence, though very different in its nature from what it was in former days.

SYLLABUSES OF INSTRUCTION IN GEOGRAPHY ISSUED BY THE ROYAL GEOGRAPHICAL SOCIETY.

II.—IN HIGHER SCHOOLS.

The problem presented by geography in secondary education is complicated by the customary organization of the pupils in forms, with the consequence that as a boy is moved up a school mainly on his linguistic results, he may have to learn about some portions of the Earth's surface twice, and may chance never to have lessons upon others. The effect is that geography is treated not only incompletely, but also nonprogressively. With methods essentially the same throughout, the subject is found to have small educational value. The remedy appears to lie in an arrangement of the boys or girls in special sets for geography, as is now the custom for mathematics and certain other subjects. In this manner it would be ensured that in his or her passage through the school each pupil would not merely learn consistently about the whole surface of the Earth, and thus obtain a sense of geographical perspective, but would also gradually use more concentrated methods, and thus travel more thoroughly, though rapidly, over the wider material of the later stages.

A further difficulty lies in the nature of the subject itself. Geography, at any rate in the school, must be considered from the human standpoint. The object of the teacher is to build up a conception of the surface of the Earth as the product of inter-acting physical forces, in order that that surface may be intelligently viewed as the scene of social activities. It is therefore clear that the geographical teaching should be related to the teaching, on the one hand, of natural science, and, on the other, of history. A frequent practice is to treat physical geography or physiography as an introduction to natural science, and for the rest to be content with the employment of atlases during the teaching of history. The result is that the two sides of the subject are not habitually connected in the mind of the pupil. The remedy probably lies in the teaching of geography on a regional basis, with such a distribution of the physiographic explanations as shall not obliterate the regional interest. At every step in the treatment the learning of the topographical data, their physical analysis, and their application to the facts of human society, whether commercial, political, or historical, should be closely correlated.

In order to carry out the principles enunciated in the preceding paragraphs, it is suggested, by way of example, that the teaching of pupils in the four years between thirteen and seventeen might be arranged according to some such scheme as the following: In the first year, the study of a considerable portion of Britain, that surrounding the school; in the second year, the whole of Britain; in the third year, Europe, and perhaps the Mediterranean; in the fourth year, the remainder of the world. In each stage a comparison would constantly be made with that which preceded. The standards in treating of all Britain would be taken from the section of the country learned in detail, those for Europe would be taken from Britain, and those for the outer continents from Europe; thus recapitulation would be ensured, and a coherent and simultaneous knowledge of the whole arrived at.

FIRST YEAR.

It is assumed that the pupils will have obtained such first conceptions of geographical facts and methods as are implied by the "Syllabuses of instruction in geography in elementary schools." That is to say, they will have learnt the use of the globe and something of the relations of the Sun to the Earth; they will understand the use of the compass; they will be able to read a map and to connect it with the landscape; and they will have had examples of the flow of rivers, their relation to the rainfall, their action as roadways and as barriers to human movement, the convergence of traffic to bridges and the resulting growth of towns, and other similar ideas well within the reach of children in preparatory and higher elementary schools. They will also have obtained some knowledge of the largest facts of the world's topography. In other words, they will have learnt the rudiments of the world's geography, and will have had them illuminated by an intelligent Heimatskunde. It is not suggested that mere Heimatskunde should be repeated in the first year of secondary training. The portion of Britain then studied should extend far beyond the home. It might, for instance, consist of Wales and the Welsh Marches, or of Yorkshire and Lancashire, or of the Thames basin and the Weald. It should be large enough, in other words, to contain complete examples of river-basins and such lengths of road and rail as will permit of the demonstration of the influence of physical features on their course. At least once in the year, at some favourable opportunity, a visit should be made to a carefully chosen viewpoint, in order that the map of the region may be correlated with the landscape, and that the pupils reading from the map may be asked to imagine what lies in each direction a little beyond the horizon of the landscape. Such a point, for instance, as Cleeve Cloud, immediately above Cheltenham, would be admirable for this purpose, with its views extending down the Severn estuary to the Welsh border, and in the opposite direction almost to the Wrekin.

At this stage it would be convenient to introduce such simple geological ideas as are needed for the explanation of the surface forms, such, for instance, as the difference between limestone and sandstone: the nature of strata and their foldings, faults, escarpments, and outliers; the deposit of alluvium; and so forth. Obviously there would be much advantage in one or two excursions for the observation of these facts, but much may be done by photographs and pictures which should, as far as possible, relate to the area chosen for study. The essential facts in the denudation of the surface, and their relation to the grain of the rock structure, involving

contrast between the longitudinal and the transverse flow of the rivers, would then be introduced, and thus a reasoned, and yet concrete, picture of the physical geography of the district would be built up. Geological maps would, of course, be compared with contoured relief maps, and for this purpose the Index Sheets of the Geological Survey and Bartholomew's coloured contour maps, reduced from the Ordnance Survey, would be found very useful. The lie of the villages along the outcrop of the water-bearing strata would next be drawn attention to, and the position of the market centres in relation to bridges or to gaps in hill ranges would be pointed out. Contrasts of agricultural conditions as between uplands and lowlands, tidal facilities upon rivers, and the relation of the mines to the structure, would be explained. The network of railways and canals would be fitted to the relief model. Maps showing the distribution of density of population would be correlated with relief and geological maps. Finally, some reference would be made to the historical factor: for instance, the frequent adoption of Roman roads as county and parish boundaries. In the course of a year it would probably be found possible, even in the one, two, or at most three hours a week which are available, to obtain a very living conception of a considerable section of the British Islands, and to obtain it by methods which, having been patiently and thoroughly used, might be assumed as available in the subsequent more rapid treatment of larger areas.

SECOND YEAR.

Britain would be studied as a whole in this year, its several sections being traversed by the comparative method, with the section studied in the first year as standard. The meteorological portion of the general physiographical processes would be appropriate to this stage, the greater moisture of the west and of the hilly districts being the text. The movement of the tides round the coasts would also be noted. Some marine charts should be shown, and the weather maps in the newspapers might be followed for a short time, and compared with the movements of the barometer and thermometer at the school. On the other hand, the geological knowledge obtained in the first year could be appealed to without the necessity of delay for parenthetical explanations. The methods employed in connection with the location of towns and the lie of roads would also be available, but would be applied to the correlation of the larger facts of economic and historical geography. Probably it might be possible to devote three or four lessons to a geographical epitome of the chief phases of English history, or, on the other hand, if the school were commercial, to a more detailed correlation of the industries and the physical geography.

THIRD YEAR.

This year would be devoted to the study of Europe and the Mediterranean, the standard for comparison being furnished by Britain. The physiographical methods would now broaden to a study of such contrasts as those involved in the equable British and the extreme Russian climates, the tidal Oceanic and non-tidal Mediterranean waters, the glacial phenomena of the Alps, and the volcanic phenomena of Italy. In this stage, the applications of geography to human conditions must, obviously, depend very largely on the character of the school. In a boys' public school stress would be laid on the scenes of classical and sacred history in the Mediterranean. In a commercial school greater weight would be given to such contrasts as are involved in the predominance of agriculture in France, and of the industries in Germany.

FOURTH YEAR.

This year would be devoted to the non-European portions of the globe. The first term might, perhaps, be given to Asia, the second to North America, and the third to the southern continents and the ocean, although the order is by no means essential. Obviously, the study of physical conceptions would now become widest. The glacial phenomena of the Alps would have been an introduction to those of Greenland and the Polar sea. The contrasts between the western and eastern climates of Europe would have prepared the way for similar contrasts in North America and in Asia. The contrast of seasons in the Mediterranean would lead naturally to the zonal arrangement of climates along the west coast of Africa, and so forth. This would be the time for a recapitulation of the world's geography from the standpoint of the British Empire and commerce.

In each of the four years the value of the study of geography would be greatly enhanced if the solution of problems were made a regular part of the discipline. They might be solved either by the whole class, under the stimulation of the teacher, or by individual pupils as written answers to questions, or as essays. Perhaps they might most easily and usefully be set on topics in which geography touches the subjects taught in other hours. Thus, by arrangement between the geographical and physical teachers, an essay might be set involving the explanation of some physical law, not in general terms, but as applied to some geographical instance, the topographical details of which would have to be taken into account. Or, by arrangement between the geographical and historical teachers, a similar question might be formulated as to the scene of some historical event. For instance, in the first year of geographical study in a school near London, in which the Thames basin and the Weald was the section dealt with, an account of the march of William the Conqueror from the battle of Hastings to his coronation in Westminster Abbey might be asked for in such a manner as to compel the pupils to connect their geographical and historical lessons, instead of keeping them in separate pigeon-holes of the mind. Or, in relation to elementary mathematical teaching, there might be a computation from given data of the density and distribution of population in some specified district.

What is essential throughout is that nothing should be taught as an isolated fact, and yet that the line of argument should be so chosen that in the end every essential fact of the world's geography which should be known to an educated man or woman would have been learnt in its due setting of related facts, and in its proper perspective.

A MODERN GEOGRAPHY SYLLABUS FOR TEACHERS IN TRAINING.

A great deal of attention is now-a-days being directed to the teaching of Geography. The old days of cram are rapidly passing away, and thanks largely to the Geographical and similar associations, people are recognizing that Geography, scientifically taught, can be made an excellent mental training. The new Syllabus in Geography recently issued by the English Education Department is certainly a concession to the modern spirit. We consider it of sufficient interest to reproduce in full. It forms the syllabus for the Elementary School Teachers' Certificate, and comes into force in 1909.

FOR PRELIMINARY EXAMINATION.'

(1) The elements of Mathematical and Astronomical Geography, including the interpretation and drawing of maps and charts, and a knowledge of map projections in common use.

(2) Physical Geography: particularly leading facts about climate and rainfall; tides and currents; common materials forming the Earth's crust; various types of land relief, coast line and river features; lake systems; the distribution of volcanoes.

(3) Characteristics and distribution of the following vegetation zones: tundras, coniferous forests, deciduous forests, prairies, steppe-lands, deserts, tropical forests.

The general distribution of plants, animals and man in relation to these natural regions. Areas of dense and scanty populations as determined by land-configuration, climate geographical position and productions.

(4) Geography of the British Isles:—

A

Physical Conditions.—General knowledge of the structure of the United Kingdom; influence of rock structure on topography.

Distribution of land forms; mountains, plateaux, escarpments and plains.

General distribution of soils as determined by structure and topography.

The river system in relation to topography.

Distribution of temperature and rainfall over the United Kingdom with the chief determining factors. Candidates will be expected to know the rainfall map of the United Kingdom, and to be able to insert the chief isothermal lines.

Distribution of mineral wealth; coal, iron, tin, copper and other minerals.

B

Economic Geography.—Distribution of agricultural products and industries as determined by the physical conditions, especially cereal, fruit and pasture areas; textile industries; mining industries; iron and ship-building centres.

Distribution of towns and their geographical significance.

Distribution of population. Arteries of commerce, natural and artificial.

(5) A fairly advanced knowledge of Europe and either of North America or Asia, and of the Oceans which wash their shores.

North America should include both Greenland and the West Indies. The isthmus of Tehuantepec will be regarded as the southern boundary of the continent. Japan should be included in Asia.

The continents should be treated from the points of view indicated under the heading of "British Isles," but only with reference to the more important features of the topography and the leading political divisions. Attention should be directed throughout to the connection of physical geography with historical, political and economic geography.

Sketch maps may be required, and importance will be attached to the illustration of answers by simple maps, sections and diagrams.

Questions will also be set having special reference to Wales.

FOR THE CERTIFICATE EXAMINATION.

(1) Mathematical and Astronomical Geography, including the interpretation and drawing of maps and charts, and a knowledge of map projection.

(2) Physical Geography; general distribution of land and water; principal factors determining climate; general distribution of winds, temperature, rainfall, tides and currents; common materials forming the Earth's crust; various types of land relief, coastline and river features; lake systems; distribution and effects of volcanoes.

(3) Characteristics and distribution of the following vegetation zones—tundras, coniferous forests, deciduous forests, prairies, steppe-lands, deserts, tropical forests.

The general distribution of plants, animals and man in relation to these natural regions. Areas of dense and scanty populations as determined by land configuration, climate, geographical position and productions.

(4) Geography of the British Isles.

(*a*) Physical conditions.

General knowledge of the structure of the United Kingdom; influence of rock structure on topography.

Distribution of land forms, mountains, plateaux, escarpments and plains.

General distribution of soils as determined by structure and topography.

The river systems in relation to the topography. Distribution of temperature and rainfall over the United Kingdom, including a knowledge of the rainfall map and isothermal lines.

Distribution of mineral wealth: coal, iron, tin, copper and other minerals. Building stones and materials.

(*b*) Economic Geography.

Distribution of agricultural products and industries as determined by the physical conditions, especially cereal, fruit and pasture areas; textile industries; mining industries; iron and ship-building centres.

Distribution of towns and their geographical significance

Distribution of population. Arteries of commerce, natural, and artificial.

(5) An advanced knowledge of Europe and, in lesser detail, the World as a whole, especially of those portions which belong to the British Empire.

Candidates will be expected to show a more thorough grasp of geographical principles than is required for the Preliminary Certificate Examination. They are recommended to pay close attention to the connection of physical geography with historical, political and economic geography.

Questions will be set having special reference to Wales.

Below is appended a few books dealing with Geography on the lines of the modern method.

The Practical Teaching of Geography in Schools and Colleges, by Alex. Morgan, M.A., D.Sc., F.R.S.E. 6d. net. (post free, 7d.). A useful and suggestive pamphlet (George Philip & Sons).

Geographical Gleanings, containing two papers on some Methods of teaching Geography, with numerous suggestions for fellow-teachers and a Mode lesson on India. By the Rev. Frank Burrows, M.A., Trinity College, Oxford. Illustrated, cloth, 1s. 6d. net (postage 3d.). (George Philip and Sons.)

Object Lessons in Geography. An attempt to teach the elements of Geography by means of Object Lessons, in 3 parts, price 1s. 6d. each. (Longmans, Green & Co.).

Practical Geography, J. & W. Muller. Contains the principles of map-construction and map reading in as elementary a form as possible for secondary schools. 2s. 0d. (George Bell & Sons.)

The Progressive Course of Practical Geography, L' Estrange. 3s. 6d. net. For middle and upper forms. *The Principles of Geography.* For preparatory forms. 10d. net. (George Philip & Son).

The Training of Teachers and Methods of Instruction.

The connection between the teaching of geography and of literature was emphasised by Prof. S. S. Laurie in an address delivered to the Fellows of the Royal Scottish Geographical Society and reprinted in the above. This address contains an important statement of the educational principles underlying the teaching of geography. Cambridge University Press.)

An Introduction to Practical Geography, Simmons and Richardson, 3s. 6d. net. (Macmillan & Co.)

Practical Exercises in Geography. A two years' course by. B. C. Wallis, B.Sc. 2s. 6d. (Macmillan & Co.)

A Practical Geography. Unstead. A wide variety of important geographical facts with exercises based on them. 2s. 6d. (Clarendon Press.)

Applied Geography. J. Scott Keltie. 2s. 6d. George Philip & Sons.)

APPENDIX 3.E

UNIVERSITY OF OXFORD

SCHOOL OF GEOGRAPHY

MICHAELMAS TERM 1907

GENERAL SEMINAR

15.	Forests of the Inter Tropical Zone especially those of the Amazon.	Miss Hockley.
29.	Weather of the Past Week.	Miss Hockley.
29.	Weather of the Past Week.	Mr. Strahan.
	Fauna of Madagascar.	Mr. Thompson.
25.	Weather of the Past Week.	Miss Livermore.
	Grass Lands of America.	Miss Wilford.
	Fauna of Forests and Grass Lands of America.	Mr. Carter.
12.	Weather of the Past Week.	Miss Lee.
	Physical Features of the South of Cape Colony and Cango Caves.	Mr. Ritter.
19.	Weather of the Past Week.	Miss Mathews.
	Peoples of North America.	Mr. Thompson.
28.	Weather of the Past Week.	Miss Wilford.
	Origin of the British Flora and Floral Divisions of Britain.	Miss Livermore.
27.	Weather of the Past Week.	Miss Dodge.
	Peoples of Central and South America.	Mr. Thompson.

From: Clippings file, Department of Geography library, University of Oxford

Geography in our Schools.

We are publishing below suggestions for a syllabus in Geography which have been drawn up by Mr. A. Ritter of the George High School for Boys. Most of our teachers, we think, will profit by a study of the suggestions, and it is recommended that they should be compared with the existing syllabus in Geography. Mr. Ritter's course should at least be the means of helping the abler teachers to prepare schemes of suitable lessons which would stimulate the interest of their pupils. Teachers who may feel inclined to profit by it in this way will, of course, understand that the requirements of the Department's syllabus must receive undiminished attention.

SUGGESTIONS FOR A SYLLABUS IN GEOGRAPHY.

*Sub-Standards A and B and Standard 1.**

Tales of adventure by land and sea; of travellers, of peoples, their habits and customs; of methods of transport; of modes of living in cold, temperate and warm regions; of animals; of forests; of natural phenomena; tales from the history of South Africa and other countries. The geography of direct observation of mountains, rivers, plains, plants, animals; nature study; school-gardening.

* For this section no Geography to appear on time-table.

Standard II.

Deal very generally with the formation of natural features such as bays, channels, rivers, etc.; the reading of maps, beginning with the plan of the school and its immediate neighbourhood; how to record on maps observations made; the globe; the compass; direction on a map.

Standard III.

To know the mode of representing on a map the chief surface features; to know the position and chief features of the division in which the school is situated on a map of Cape Colony; to explain and know a map of the division in greater detail; to know something of the birds, flowers, fruit, shells, fish, etc., that may be found in the district; to know the names and positions of the continents, the position of the great mountain belts and two or three of the chief rivers in each continent; typical scenes of natural life in (1) the polar regions; (2) lofty mountains; (3) deserts; (4) temperate and tropical regions; (5) grasslands and forests; (6) round the sea-coast.

Standard IV.

Familiarity with the globe and form of the earth; apparent movements of the sun; day and night; latitude and longitude; altitude and how this is represented on a map; correlation of climate-belts and vegetation, and some of the more important economic products; description of life in some industrial centres and great ports; to know the map of Cape Colony; the chief mountain ranges, river basins and natural divisions; the chief industries and railway systems; the position of the more important towns; the wet and dry seasons; direction of hot and cold winds and their connection with formation of clouds, fog, and mist; sowing and reaping seasons; distribution of population and the main facts that affect the distribution in Cape Colony. Rainfall and temperature with respect to agriculture in Cape Colony.

Standard V.

A general knowledge of the distribution of land and water; the main characteristics of the continents, and a more detailed knowledge of Africa and Europe; commercial relations with the Colony; the seasons. General distribution of rainfall and temperature.

Standard VI. or High School Standard A.

Climate; to show climatic differences between Cape Colony and other parts of the world; winds; rainfall; the relations between geography and history; the nature of strata, faults, escarpments; a more detailed knowledge of Asia, America, Australasia.

Standard VII. or High School Standard B.

Thermometers and barometers, daily readings of which must be kept; such simple geological and chemical ideas as are required for the explanation of the difference between limestone and sandstone, the folding of strata, rocks; movements of the ocean; isotherms, isobars; revision of the World with special attention to the British Isles; British Colonies and Dependencies in greater detail; geographical distribution of the principal commercial products.

NOTES.—Nothing should be taught as an isolated fact. Suitable excursions should be arranged, of which notes should be made and filed.

Problems should be given for solution. No pictures or slides should be shown unless they have something definite to teach.

As soon as the Ordnance Survey Maps are procurable, they should be placed in the hands of the pupils.

* In this Standard no Geography to appear on time-table.

Suggestions for the Teaching of Geography.

A scheme, drawn up by a committee appointed for that purpose, consisting of Messrs. T. Young, M.A., G. McRobbie, H. Jamieson, G. B. Kipps, F.R.G.S., and H. G. Eaton (Secretary), and adopted by the Cape Division Teachers' Association.

Profatory Note.

In drawing up this scheme for the Revision of the Syllabus in Geography, your committee took the following points into consideration:—

1. That a drastic alteration of the Departmental Syllabus is unnecessary and undesirable.
2. That since from its earliest sentient moment the child is in contact with Geographical matter, it is desirable that the teaching of Geography should be extended below Standard II.
3. That considerable latitude should be allowed to Principals in the method of treatment, provided only that the broad principles laid down in the Departmental Syllabus be adhered to.
4. That it is desirable that the Principals of all the schools in a Division (or natural geographical part of a Division) should formulate some scheme of geographical teaching throughout the schools of such Division (or part of a Division). This scheme should be submitted to the Inspector for his criticism and approval.
5. That it is desirable that it be an instruction to Inspectors to examine upon the scheme so approved.

Having thus laid down the broad basis upon which the Scheme of Revision should be established, your Committee is of the opinion that it will best fulfil the purpose for which it was appointed by embodying the above points in a series of Suggestions to Teachers, together with a detailed Suggestion for the treatment of Geography in each Standard.

1. SUGGESTIONS TO TEACHERS.

Geography is concerned with the surface of the earth, its condition in various parts, the relation of these parts to each other, and the influence of these conditions and relations upon plant and animal life, especially human life.

It follows from the above that the subject matter of Geography can be seen and handled, can be most readily made to appeal to the senses of sight and touch, and consequently is, in the earlier stages at any rate, totally removed from the region of the abstract. It should be constantly borne in mind that in Geography, as in all other subjects, the natural process is to proceed from the known to the unknown. In Geography "the known" lies close at hand, and is made up of the child's environment. The crown of the road becomes a watershed, the gutter a river. A rain pool becomes a lake with its affluent and effluent streams, deltas, promontories, peninsulas and islands.

The teaching therefore should be based upon the natural objects which lie within the range of the child's own personal observation. The simplest and most significant facts must be taken first, and from these, generalisations later on, will lead naturally to broad Geographical principles.

Imagination is a potent factor in the development of the child's mind, and should be constantly called into play. Mental pictures of things and events outside the child's

range of observation should be formed, in connection with discoveries, varying conditions of climate, distribution of races, products both of land and sea. These are full of natural attractiveness and are well calculated to arouse curiosity, retain attention, and enlarge the mental horizon generally.

It should ever be borne in mind that Geography is not an isolated subject, but is closely connected with nearly all the subjects of the school course; for example:—History, Arithmetic, Nature Study, Woodwork, Physics and Chemistry, Domestic Economy, and Reading.

The threefold aspect of Geography—Physical, Political and Statistical—should not be lost sight of, and the treatment of these aspects as separate entities is unwise and uneducational. Their close connection cannot be too strongly insisted upon, and no separation should be permitted even in the earliest lessons.

The teaching of Geography therefore is not the learning by rote of a vast mass of undigested facts, but a process whereby the student's mind is brought into contact with the outside world. The child must, from the very first, work for himself, and take nothing for granted. This will lay a foundation for reasonable judgment when the time comes for him to rely upon the writings of others for information.

The teaching should be:

I. ***Inductive.***

The children should be led, under the guidance of the teacher, to form their own conclusions from personal observation of the natural phenomena surrounding them.

II. ***Realistic.***

No method should be neglected whereby geographical conceptions may be vitalised; and full use should be made of observations of Nature, Model-making, selected pictures accompanied by careful questioning to bring out the points which the pictures are intended to illustrate, map and plan reading, and map drawing, not as an end in itself, but with the object of leading the child to draw reasoned conclusions from the data he inserts.

Sketch-maps, diagrams and plans from given data should be looked upon as a process of rapid and concise note taking.

III. ***Practical.***

Every encouragement should be given to careful observation of natural phenomena. Notes should be made and records kept. Sketch-maps and diagrams should be prepared from data collected by the children themselves. Measurements should be taken, and experiments made, and their significance impressed by means of calculations based upon them.

It is desirable that the following instruments should form a part of the equipment of every school:—

Barometer (direct reading), Thermometer (Max. and Min.), Raingauge, Compass, Measuring chain (Gunter's) or 100 link Tape, and a Planetable. (*See Appendix I Apparatus*).

DETAILED SUGGESTIONS FOR THE TREATMENT OF GEOGRAPHY IN EACH STANDARD.

Below Standard.

Nothing formal should be attempted. The object aimed at should be the breaking of the ground for future instruction. The children should be encouraged to ask questions. The lessons should take the form of stories dealing with the wonders of the world around them. Use should be made of Native Folklore, South African and other Fairy Tales, Greek Myths and Norse Legends.

The scheme of Object Lessons should include geographical subjects. Distinctive human and animal interests should be kept in view, and correlation should not be lost sight of. Facts learned should be expressed in the Kindergarten occupations.

Standard I.

There should be no abrupt transition from Infant Department methods. Stories and Object Lessons should still form the basis of the method of teaching, the treatment being slightly wider. As occasion requires the meaning of geographical terms such as land, river, mountain, valley, lake, island, should be simply explained and illustrated by means of sand, clay, and water: the models should be reproduced by the children. The general directions of North, South, East and West should be learned from the children's own observations on the position of the sun.

Standard II.

A plan of the playground or some similar open space near the school, leading up to a plan of the school block (no interior details) should be drawn to scale in a mapping book from the children's own measurements by stepping. A decimal system should be employed in preparing the scale, say ten steps to be represented by one unit on the scale. School walks should be utilised for the purpose of studying the topography of the neighbourhood. Observations of the daily motions of the sun should be made by means of a vertical stick fixed on a horizontal board. Points of the compass should be marked on the plan. A map of the immediate neighbourhood of the school should be prepared by the teacher, in which the school appears on a smaller scale than on the plan, and the children should be asked to show on the map the streets or roads by which they come to school. In this way they will gain their first notions of a map. Clay and sand models of the chief natural features of the country immediately surrounding the school should be constructed. These models should be reproduced by the children. Descriptive and story lessons about foreign lands, and their inhabitants should still be given, the treatment being wider, and to include more detail than in the previous year. The difference between a picture and a plan should be taught by means of illustrations of the school and neighbourhood compared with the plans prepared by the children.

Standard III.

A relief model of the district should be prepared by the teacher and scholars after actual visits made to the various places, and from this a conventional map should be drawn. This will prepare the way for an appreciative understanding of both photo-relief and conventional maps of the Division in which the school is situated. A map of the Division should be drawn on the blackboard, differently coloured chalks being used to indicate varying heights above sea-level. This should be copied by the children as a brushwork or crayon exercise. The study of the industries of the inhabitants should be systematic In this connection the relief map will be in constant requisition showing how the physical features divide the country into natural regions and influence the occupations of the inhabitants, communications and history of development. It should be noted that seas unite as well as divide. Correlation of the geography of the Division with that of the rest of the Colony should not be neglected. The Railway Systems should be known and the children should be taught how to go from one part of the Colony to another (this to apply only to parts connected by railway).

Standard IV.

The work of the previous Standards will have prepared the way for a systematic study of the whole Colony. The methods adopted will not differ from those of previous

years. Photo-relief maps should again be used showing the division into natural regions, and the influence of physical features upon occupations, communications, development and the like.

Latitude and Longitude should be taught as affecting productions, and time respectively. Their co-ordinating value may be left for later consideration.

The position of South Africa with respect to the rest of the world should be taught by means of the Trade Routes, and the commercial inter-relationships of the peoples. The children should be taught to draw, with the teacher's help, a sketch map of any school-walk that they take, and to form approximate notions of distance by pacing a given length of road. From these outdoor sketches a map should afterwards be drawn roughly to scale, conventional signs for roads, railways and bridges being used. The direction of the wind, and observations on the weather should be noted and entered on a chart in this and following years. The form of the Earth, and the phenomena of Day and Night should be thoroughly taught experimentally, and observations on the altitude of the Sun should be made and recorded, by means of the varying length of the shadow cast by the school building at different times of the year. Historical associations of places in the vicinity of the school should not be neglected, and definite teaching with regard to the value of the sea should be given. Systematic map drawing should be taught, some part of a map being dealt with in one lesson, and completed in subsequent lessons. Descriptive lessons of scenes in other lands should be given to prepare the way for more definite teaching in future years, and children should be encouraged to bring to school any illustrations bearing on their lessons they may find in pictorial magazines. The practice of giving a subject from the Geography lesson as an exercise in original Composition should be commenced in this Standard, and continued in following years.

Standard V.

Where possible the teacher should prepare a relief map of Africa and Europe treated as a whole. In any case photo-relief maps should be used, the various physical features noticed, and the children encouraged to draw inferences as to their effect upon natural regions, national regions, occupations, fertility of soil, climate, productions, natural barriers between nations and races, and means of inter-communication. The close connection between the Geography and History of this Standard should never be lost sight of, and the relief map should be in constant evidence during the History lesson. Descriptive lessons on the industries of the various countries should be given, and illustrated by means of photographs and pictures, to be supplied, as far as possible, by the children themselves. The seasons should be taught from the point of view of their effect upon productions, and daily barometric readings and weather observations should be recorded. Children should be taught to study the phases of the moon, and should be able to draw them in their books from memory. Heights of trees, chimneys, etc., should be found by using the shadow of a pole of known length as a standard of comparison, and the children should be taught how to find the distance across a river by the use of two right-angled triangles. Correlation with Arithmetic should not be lost sight of.

Standard VI.

The same method should be adopted in dealing with Asia and America as was used for the previous year's work, viz. physical relief or photo relief maps should be in evidence throughout, and should always precede the introduction to a political map. Trade Routes and methods of inter-communication should be carefully studied, and the more obvious laws governing the interchange of productions explained. The school walks should be used for doing some very elementary surveying—neglecting elevation—of a selected district near the school, a cheap and simple form of plane-table being used. A map of this selected district should be carefully drawn to scale. Features of the surrounding country should be studied in greater detail, and quarries, and railway cuttings visited and vegetation and forest trees observed. Careful records of such visits and observations should be kept. Maximum and Minimum Thermometric readings, and practical use of the Rain gauge should be added to the Barometric work of the previous year. All readings should be entered on a chart. The Latitude and Longitude of the school should be found (approximately) by observation, and definite teaching on the co-ordinate value of meridians and parallels should be given. The effect of the contact of the New World upon Europe, and especially England, should not be lost sight of in the History lessons. The correlation with Arithmetic and Mensuration should be emphasized and should find expression in examples based upon data collected by the children.

Standard VII.

The Geography of this standard runs parallel with the History, i.e the History of the Expansion of England into the British Empire, and the close connection between these two subjects should never be lost sight of. The position of England with respect to the continent of Europe should be studied in greater detail and the gradual expansion of that country into the Empire should be very carefully traced.

Geographical distribution of natural productions should be studied from the globe and the great international and intercolonial trade routes learned. Diagrams on squared paper should be prepared by the scholars showing in a graphic manner the connection between exports and imports of the various parts of the Empire. Simple explanations of the tides should be given, and connected with the motion of the moon. Lessons upon the various agencies at work in shaping the surface of the Earth—winds, rain, frost, snow, ocean currents, and earth movements,—should be given, and illustrated by familiar examples that may be observed by the children. Climate should be dealt with as a summing up of the whole matter of influences affecting weather.

The teaching should follow the lines of the previous year but in greater detail, and the facts brought out should be applied to the countries to be studied.

The influence of land masses upon prevailing winds and ocean currents should be taught from the relief-map and the effect which the concentration of the land masses to the north of the Equator has upon wind direction and periodicity should be studied. Children should be encouraged to read books of travel bearing upon their lessons.

General Suggestions.

It is desirable that every school library should include a "Teacher's Shelf", and there should be provided a special exercise book in which each teacher using the shelf might record anything he had found useful in his work.

APPENDIX I. (APPARATUS).

Barometer.

This instrument can easily be put together by the teacher with an elementary knowledge of Physics. The various parts may be obtained from Heynes Mathew and Co at the following prices.

Barometer tube (with bulb). 2s. 6d.
Mercury (½lb.) 2s. 6d.
Metre scale divided m.m. and m's. 2s. 6d.
The board for mounting, a piece of clear pine 4 ft×6 in, will cost about 1s.

After the tube has been filled and mounted if the meter scale is fixed to the mounting board with its lower end on a level with the mercury in the short limb of the tube, the upper readings will be sufficiently correct for all practical purposes.

Thermometers.

A good Max. and Min Thermometer may be obtained from Lennon Ltd. for 4s. 6d.

Rain-Gauge.

An efficient rain-gauge can be made as follows:— procure a plain glass jar having a flat bottom inside, and an enamel-ware funnel of greater diameter than the jar. On the outside of the jar paste a paper scale divided into inches and tenths, taking care that the lower end of the scale is level with the bottom of the jar on the inside. The funnel is to be placed in the jar to serve as a collector.

To find amount of rain-fall use the following formula:—

D = Inside diameter of jar.

F = Inside diameter of funnel.

W = Amount of water in jar read directly from the scale (jar must be horizontal at time of reading).

$$\text{Rainfall} = \frac{W \times D^2}{F^2}$$

Measuring Chain (Gunter's) T. Cook & Sons, 100 links 14s. 6d.

Compass (Boat) 11s., 14s., 18s. from T. Cook & Sons.

Planetable say (The Cross).

The Planetable consists of a drawing-board mounted on a tripod stand. Stretched on the table is a sheet of drawing paper, on which the plan is made. The base line connecting the two stations from which the observations are made is drawn to a suitable scale on the paper; and when the table is set up and levelled at the first station the sighting rod, which consists of a ruler provided at its ends with sights, is placed at the corresponding end of the base line drawn on the plan. All the objects to be shown on the plan are sighted in turn, and their directions drawn in at once from that end of the base line. On moving the table to the second station the sighting rod is placed touching the other end of the base line, and the new directions of the objects are again drawn in. The intersections of the lines representing the directions to the different objects give the positions of the objects on the plan. The (magnetic) north and south direction may easily be marked in by means of a pocket compass. Care must be taken that the base line on the plan be exactly in line with the two stations from which the observations are made. Any difficulty in obtaining the true direction of an object on account of its being too far above the plane of the table can be obviated by stretching a piece of thread across the tops of the two sights, and using it instead of the vertical thread on the farther sight-hole to obtain the direction of the object.

(*From Practical Geography.* J. W. Miller).

Books suggested for the teacher's shelf.

Speke's "Discovery of the Sources of the Nile".
Wallace's "Travels on the Amazon".
Darwin's "Voyage in the Beagle".
Lady Brassey's "Voyage in the Sunbeam".
Seeley's "Expansion of England".
Grant Allen's "Science in Arcady".
Chambers' Encyclopœdia.
Garlick & Dexter's "Object Lessons in Geography".
Gardiner's Historical Atlas.
Livingstone's "Travels".
F. C. Selous' "Journal of Travel".
H. M. Stanley's works.
Emigration Handbooks issued by the Emigration Departments of the various Colonies.
Johnson's Travels in Africa.
Drummond's "Travels".
Capt. Cook's "Voyages".

THIRD YEAR SENIOR PUPIL TEACHERS' COURSE.

GEOGRAPHY.

During the last few years no subject of the school curriculum has undergone more rapid changes in its method of treatment than Geography. The old point of view which laid stress on mere topography is rapidly being displaced; and rightly so, for, from the modern educational standpoint it had little to recommend it. The old type of teaching, treating geography almost wholly as a memory subject, had not much in its methods that appeals to modern ideas. It belonged almost entirely to the world of books from which the child learned by heart a vast number of hard facts without seeking to discuss the "how" or the "why" of the matter. As a consequence, the teaching proved uninteresting to the teacher, and the lesson dull to the pupil. In contrast to this, the modern method seeks to present geography in its natural aspect, in its relation to the earth, to refer every fact to cause and effect, and so to provide a training in reasoning which enables the pupil to think geographically. At the same time the topographical aspect is not lost sight of; but the enumeration of names of comparatively little importance is discouraged, the test for including a name being that the place has some geographical, industrial, or historical importance, or that it provides a link in the chain of cause and effect. Again, from the modern point of view, the old division of geography into watertight compartments—mathematical, physical, and political—is no longer observed; and these parts are not treated as separate entities, but are considered in their interrelations as parts of a complete science. If any arbitrary division is to be adopted, the usual scientific one may be taken, namely, Geography and Practical Geography. For convenience sake this classification will be used here.

Although these articles are primarily intended for the use of teachers of third year senior pupil teachers, the outline of method suggested should be gradually introduced into the earlier years of the course; for in future years some knowledge of the subject from the regional and the practical standpoints will be expected from pupil teachers in the first and second senior years. Owing to the comparatively fresh point of view which a study of geography on regional lines places before students, the following scheme of work to be overtaken by third year senior candidates this year has been drawn up for the guidance of teachers.

1. ***Geography.***—It is somewhat difficult to define Geography owing to the indefinite nature of its sphere of action. The following definition—taken from the excellent little volume on Modern Geography in the *Home University Library*—will express what is meant and provide us with a suitable working definition: "Geography deals with the surface-relief of the earth, and the influence which that relief exercises upon the distribution of other phenomena, and especially upon the life of man."

2. ***Point of View.***—In dealing with this subject, teachers must clearly keep in view first of all that mere memory work counts for little; and they are further assured that questions set in the examination at the end of the year will not be of such a nature that they can be answered as a result of the mere memorising of facts. With reference to this point, teachers are recommended to impress on their students the above remarks concerning the contrast between book methods and nature methods. The first two paragraphs of the preface to Mr. Mort's *Regional Geography* should also be carefully studied, and should form the basis of first lessons in the subject.

3. ***World Geography.***—Before the actual study of regional geography can be begun, the fundamental principles of "World Geography" must be revised. Such points include the cause and effect of the great wind-systems and currents of the world, and the seasons. Climate should also be studied from an observational and practical point of view, with special reference to local conditions.

4. ***Relief.***—The necessity for the careful study of the relief of each country should be emphasised. "The relief and the climate largely determine the crops that are to be expected." New terms such as *folded mountain*, *dissected plateau*, *rift valley*, *foundered basin* should always be explained by means of a model. It is very necessary to see that pupil teachers grasp their significance. If examples illustrating new terms can be found in the neighbourhood, so much the better.

5. ***Maps and Diagrams.***—All maps and diagrams should be carefully studied on the lines indicated in the preface to Mr. Mort's book, *i.e.*, "before the text of the book is looked at."

(*a*) The different kinds of maps pictured in the book will necessarily lead to explanations of such terms as *contour*, *section*, *hachure*, *orographical* (indicating height of land by colour), *bathymetrical* (indicating depth of sea by colour), *bathy-orographical* (indicating both height of land and depth of sea by colour).

(*b*) The scales of maps and the reference keys to colour or shading should always be examined before the map is studied.

(*c*) Constant practice is necessary in the making of orographical sketch maps (not from memory) both in a geographical note-book and on the blackboard. Different media should be used, *e.g.* colour washes, crayons, pencil or ink shading, and coloured chalks (for blackboard work). The study of an important country should not be considered complete until the pupils have made (1) an orographical map, (2) a productions and minerals map, and (3) a map showing either isotherms, or rainfall, or prevailing winds and ocean currents, or industries and means of communication, or distribution of population. As regards isotherms and winds it will be advisable to show summer and winter conditions on separate maps. These maps should be quickly done from outlines traced roughly from an atlas. One of the maps suggested under (3) should be chosen for each country, or they may be divided among the class, each pupil doing one only.

For the purpose of map-making, and for the drawing of diagrams, etc., pupil teachers should have a special geography exercise book, con-

taining blank pages on the left side and ruled pages on the right side, and a supply of squared paper and squared tracing paper. Maps, notes, and observation work done by pupil teachers should be kept in these notebooks, and the books should be available for examination when Inspectors visit the school.

6. ***Regions.***—The regions or geographical units into which each country is divided should also form the subject of a rough sketch map. New words such as *tundras*, *steppe*, *savanna*, *prairie*, *pampas*, etc., should be described and explained. Comparisons should be instituted between similar regions that occur in various countries, *e.g.*, the "Mediterranean" characteristics of Southern Europe, Northern Africa, the Cape Peninsula, parts of south coast of Australia, and of the Pacific coast of America—winter rains and a long dry summer.

When their pupils have obtained a working knowledge of the principles underlying the new method, teachers should endeavour to fit these to the pupils' own store of ideas, in order that by seeing how geographical phenomena affect their own locality the pupils may more fully appreciate these principles when they are applied to wider regions.

7. ***The Home Region.***—For this reason we advise teachers to make first of all a study of the home region, *i.e.*, the neighbourhood best known to the pupils. This is approximately the geography of Standard III. treated on regional lines. Orographical maps should be prepared; and relief, climate (temperature, rainfall, winds, etc.), vegetation and animals, means of communication, industries, etc., studied on the lines suggested above. (See article on this subject in EDUCATION GAZETTE of 7th September, Vol. XI., No. 7, page 314.)

8. ***The Cape Province.***—Widening the circle we come next to the Cape Province which should also be treated in detail. The Cape Province forms an excellent example for regional treatment, as the regions are decidedly marked. They should constitute reference points with which to associate ideas connected with regions of foreign countries. None of the smaller regional geographies give sufficient detail as regards the Cape Province. Teachers should therefore supplement book work with notes. (The section on the Cape of Good Hope by Dr. Muir and Dr. Kolbe in the *International Geography*, and the article on the Geography of the Cape Province, in the EDUCATION GAZETTE of 21st September, Vol. XI., No. 8, pages 354 and 355 will be found useful).

9. ***The Union of South Africa (and Rhodesia).***—The Union of South Africa should be treated on similar lines, but less topographical detail is to be expected than in the two previous sections. (Consult articles in the *International Geography*).

10. ***The Continents.***—The Continents should now be taken up in order, beginning with Europe. Teachers may have a difficulty here as regards what amount of detail is to be expected. They should remember that the text books they are using were written originally for pupils in the British Isles; and that consequently the detail expected from these pupils—especially as regards the British Isles—must not be required from our pupils in South Africa, who are rather recommended to specialise in the preceding sections, especially those dealing with the Home Region and the Cape Province. Teachers of pupil teachers are advised constantly to direct the attention of their pupils to the *point of view*, and to discourage memorising of facts, always insisting that it is the causal relations that are of importance. The questions and exercises at the end of each section of Mr. Mort's *Regional Geography* will serve to direct teachers and pupils along the proper lines. Another guiding principle is pointed out in the first paragraph of the preface to this book: "delete the names of physical features and towns that are not likely to be encountered after school life."

11. ***The Oceans.***—One or two lessons on the Oceans should be included in the course.

12. ***Current Events.***—One other point must be mentioned. Frequently in our visits to schools we have to point out to teachers of the upper standards the need for interesting their pupils in current events by means of newspaper cuttings and pictures from good illustrated papers. This subject should form an incidental in the teaching of geography to pupil teachers in this final year; and candidates will be expected to be familiar with the position and importance of places that have been concerned in the world's politics during their year of training.

While the EDUCATION GAZETTE has indicated Mr. Mort's *Regional Geography* as a suitable text-book for pupils' use, it should be distinctly understood that teachers are not compelled to use this book, or, for that matter, any other book, for class teaching purposes. Some teachers may prefer to base their teaching on books they have previously used in their own studies, and to recommend their pupils to purchase these books. Others, again, may prefer to make the geographical notebook the basis of the pupils' work. This plan has much to recommend it. At the same time, it might be advisable if teachers in Training Centres would indicate to the Department—when they submit the list of lessons on Practical Geography at the beginning of the year—the name of the textbook on Regional Geography they propose to adopt.

A list of books and atlases suitable for class use, or for reference in the Training College library will be given in our next issue.

GEOGRAPHY: BOOKS AND APPARATUS.

The subjoined list of books and apparatus is published with special reference to the geography work for the Third-Year-Senior Pupil Teachers' Course.

For convenience' sake the books have been arranged under the following heads: (1) General and Regional Geography; (2) Human Geography; (3) Physical and Practical Geography; (4) Statistics; (5) Maps, Atlases and Pictures; (6) The Teaching of Geography; (7) Apparatus. Where a book might have been classified under two heads it has been placed under what has been considered the more important. The list includes most of the recent smaller text-books on the subject; larger books will be referred to in a future list. Books specially useful as text-books (either for teachers or pupils) have been denoted by a dagger (†); and books and apparatus which should be considered essential for a large Training College reference library have been marked with an asterisk (*). Many of the books mentioned are contained in the Library of School Text-Books at the Education Office. Teachers who cannot personally consult the library, and who desire to have further information about any of the books contained in the list, are requested to address their communications to the Departmental Instructor in Nature Study.

1. General and Regional Geography.

*Guide to Geographical Books and Appliances: George Philip & Son, 5s.

A complete guide to recent geographical literature.

†A Regional Geography for Intermediate Classes, by F. Mort: Oliver & Boyd, 1s. 9d.

On the lines suggested by the Department.

†A Rational Geography, by Ernest Young: George Philip & Son, 3 vols., 1s. 6d. each.

I.—Climate: The British Isles, Europe.
II.—Tides, Winds, Currents, Latitude and Longitude: America, Africa.
III.—Map drawing, Map projection, Surveying: Asia, Australasia.

These are excellent books, on the same lines as Mort's. In addition to the regional work they cover most of the ground required for practical geography. Suitable as reference books for teachers.

†Regional Geography, by J. B. Reynolds: A. & C. Black. 5 parts, 2s. each.

On lines similar to above books.

†General Regional Geography, by Unstead & Taylor: George Philip & Son, 6s.

A fuller text-book than the smaller volumes mentioned above.

*†A Progressive Course of Comparative Geography, by P. H. l'Estrange: George Philip & Son, 6s.

This book should be in the hands of every teacher of the work. It is full of excellent ideas, and contains much that cannot be got in other books.

†The Senior Scientific Geography, by Ellis Heaton: Ralph Holland, 5s. net. (Also issued in seven parts, 1s. 3d. net to 2s. 6d. net, with some additional matter.)

Contains some very good diagrams.

†A Text Book of Geography, by G. C. Fry: University Tutorial Press, 4s. 6d.

*Elementary Studies in Geography, by H. J. Mackinder: George Philip & Son, 4 vols., 2s. each. Volumes are: Our own Islands; Lands Beyond the Channel: Distant Lands; The Nations of the Modern World.

The last two volumes especially should be useful to students for widening their ideas. Vol. IV. will be specially valuable in relation to recent world history. "Almost every problem of to-day is a world problem, and the comprehensive outlook must be cultivated."

†Senior Geography, by A. J. Hubertson: Oxford Press, 4s.

*Descriptive Geography, by A. J. and F. D. Herbertson: A. C. Black, 8 vols., 2s. 6d. each.

These books contain reliable, graphic, interesting, and instructive passages carefully selected from the writings of modern travellers. They are useful as geographical readers or for the library. The series includes—Africa, North America, The British Isles, The British Empire, Europe.

*Africa as seen by its Explorers, edited by E. J. Webb: Edward Arnold, 2s.

Extracts from the times of Herodotus down to our own.

*Modern Geography, by Marion Newbigin in *The Home University Library*: Williams and Norgate, 1s. *net*.

Those who are teaching geography in this course should certainly obtain this book.

2. Human Geography.

*Handbook of Commercial Geography, by G. G. Chisholm: Longmans, 15s. *net*.

A standard work on the subject.

*Man in Many Lands, by L. W. Lyde: A. & C. Black, 2s. 6d.

An introduction to the study of geographical control.

*Man and his Work, by A. J. and F. D. Herbertson: A. & C. Black, 1s. 6d.

Describes human geography from the simplest societies to the complexity of modern civilization.

*Peeps at Many Lands and Cities: A. & C. Black, 1s. 6d. per volume.

Complete list from A. & C. Black's catalogue. See also note in recent *Education Gazette*, page 476. Representative volumes should be in every Training College Library.

*†The New Outlook Geographies, by Brown and Johnston: Harrap & Co.
How People Live, 1s. 6d. The Home of Man, 2s. 6d.

These books are useful alike for the library and for the teacher to supplement the exercises of the class book.

*Readable Books in Nature Knowledge: Macmillan & Co., 1s. 6d. each.
Threads of the Web of Life; Tillers of the Ground; The Wonders of Physical Science; The Changeful Earth.

These books should be in every large Training College Library.

3. Physical and Practical Geography.

Physiography, by Huxley and Gregory: Macmillian & Co., 4s. 6d.

The Realm of Nature, by H. R. Mill: John Murray, 5s.

These are classics on the subject of Physiography.

OUTLINES OF PHYSIOGRAPHY, by A. J. Herbertson: Edward Arnold, 4s. 6d.
A useful book written from the modern standpoint.

GEOGRAPHY: STRUCTURAL, PHYSICAL, AND COMPARATIVE, by Prof. Gregory: Blackie & Son, 6s. net.
Emphasises structure and the evolution of continents as they are to-day.

*THE GEOLOGY OF THE CAPE PROVINCE, by Rogers & du Toit: Longmans, 12s. *net*.
Training Colleges which have not a copy of the second edition of this book should make application to the Education Department.

*CLIMATIC CONTROL, by L. Bonacina: A. C. Black, 1s 6d.
Discusses climatology, and the effects of climatic conditions on man's life and occupations.

*GEOGRAPHICAL PICTURES: A. & C. Black: in packets of six, 6d. per packet.
Pictures of land formations and how they are made; from excellent photographs. Already published: Glaciers, mountains, valleys and lakes. (For fuller description see A. & C. Black's catalogue.)

*THE BOOK OF NATURE STUDY, edited by Prof. Farmer: The Caxton Publishing Co., 6 vols., 7s. 6d. each.
Vol. VI. is devoted to Geography.

†A FIRST BOOK OF PHYSICAL GEOGRAPHY, by W. M. Carey: Macmillan & Co., 1s. 6d.
This is one of the best small Physical Geography books; and if pupils wish to get a new Physical Geography they should be advised to buy this one. It might also with advantage be introduced into the lower years of the course where teachers feel that the present one is unsuitable for their needs.

*†AN INTRODUCTION TO PRACTICAL GEOGRAPHY, by Simmons & Richardson: Macmillan & Co., 3s. 6d.
A good book for teachers, but too full for pupils' use. Full of instructive examples and exercises.

PRACTICAL GEOGRAPHY, by J. F. Unstead: Oxford Press, 2s. 6d.
Another useful book for teachers.

†A CLASS BOOK OF PRACTICAL GEOGRAPHY, by Young and Fairgrieve: George Philip & Son, 1s. 6d.
This book gives an elementary and succinct account of the work of practical Geography, under the heads of Climate, the World as a Globe, Maps and Map making; and it contains a good collection of exercises. It would form a suitable text book for third year senior pupil teachers, if one is desired.

PRACTICAL GEOGRAPHY, by J. W. Miller: Geo. Bell & Sons, 2s.

*HINTS TO METEOROLOGICAL OBSERVERS, by W. Marriott: Edward Stanford, London, 1s. 6d.
Contains a full account of meteorological instruments and work.

*UNION AGRICULTURAL JOURNAL: Government Stationery Office, 2s. 6d. *per annum*.
Rainfall records for various places in the Union of South Africa.

*SOUTH AFRICAN RAILWAY TIME TABLE: Government Stationery Office, 3d. (at any large railway station).
Contains a useful railway map, and heights of stations (for drawing sections).

4. STATISTICS.

*THE STATESMAN'S YEAR BOOK, edited by J. S. Keltie: Macmillan & Co., 10s., *net* (annually).

*WHITTAKER'S ALMANACK, 1s. or 2s. 6d.

*THE SOUTH AFRICAN ALMANACK AND REFERENCE BOOK, edited by E. Glanville: Argus Co., Cape Town, 7s. 6d.
Contains up-to-date statistics with reference to the Union of South Africa.

*SOUTH AFRICAN ALMANACK: Lennons Ltd., gratis.

5. MAPS, ATLASES, AND PICTURES.

Maps and Atlases.

†THE OXFORD WALL MAPS: The Oxford Press, 8s. 6d. each.
The World series consists of eight maps on regional lines. (For particulars see the catalogue of the Oxford University Press.)

†BATHY-OROGRAPHICAL MAPS: W. & A. K. Johnston, 12s. each.
A new series, compiled from the latest available information. Contour lines and shades of colour are most carefully chosen. The series includes: The British Isles, Europe, North America, South America, Africa, India, Asia, The Atlantic Ocean, etc. This series is recommended to training centres wishing thoroughly up-to-date maps.

†*OROGRAPHICAL MAP OF THE CAPE PROVINCE: W. & A. K. Johnston.
Supplied gratis by the Education Department to schools recommended by Inspectors.

*†PHYSICAL TEST MAPS: W. & A. K. Johnston, 1d. each.
A new series of hand maps showing coast-line, rivers, lakes, and contours, but no names. Highly recommended for use in class. Series includes Africa, The Alps, India, Europe (in parts), North America, South America, etc.

*LITERARY AND HISTORCAL ATLASES, by Dr. Batholomew in *Everyman's Library*: Dent & Sons, 1s. net.
Europe and America already issued, and others promised. These Atlases contain many maps specially useful from the modern geographical point of view. See recent notice in EDUCATION GAZETTE, page 466.

*†CONTOUR MAPS: BARTHOLOMEW'S REDUCED SURVEY MAPS: The Geographical Institute, Edinburgh, Paper 1s. each, Cloth 2s. each.
Unfortunately there are as yet no useful contour maps of South Africa. Teachers are advised to obtain one of the above sheets for class demonstration purposes. Sheet No. 17, Scotland, shows contouring for every 250 feet from sea level up to 3,000 ft.

†HOW TO USE COTOUR HAND MAPS, by J. A. White: George Philip & Son, 6d.
A useful little book for teachers who are not familiar with the subject.

*†AN ADVANCED ATLAS FOR SOUTH AFRICAN SCHOOLS: T. Nelson & Sons, 4s.
The most suitable atlas for South African Pupil Teachers.

*ATLAS OF THE WORLD'S COMMERCE, by Dr. Bartholomew: Newnes, 21s.
A standard atlas of modern geography.

A SCHOOL ECONOMIC ATLAS, by Dr. Bartholomew: The Oxford Press, 2s. 6d.

*A MODERN SCHOOL ATLAS OF COMPARATIVE GEOGRAPHY: Philip & Son, 3s. 6d.

THE SCHOLAR'S GEOGRAPHICAL EXERCISE BOOK: W. and A. Johnston, 4d.
A book suitable for keeping geographical notes, and for recording results of work in practical geography.

Pictures.

(See list in EDUCATION GAZETTE of 2nd November, p. 476.)

*GEOGRAPHICAL PICTURES: A. & C. Black, 6d. per packet.
See note under *Physical and Practical Geography* section above.

WORLD PICTURES, by J. B. Reynolds: A. & C. Black, 2s.
Regional Geography illustrated by accurate types of scenery.

*PICTORIAL GEOGRAPHIES: A. C. Black, 1s. 6d. each.
An excellent series on regional lines: letterpress and picture series includes: The World in Pictures, The British Isles in Pictures, Europe in Pictures, The British Empire in Pictures.

†GEOGRAPHICAL DIAGRAMS, by H. J. Snape: A. C. Black, 1s. 4d.
Certain diagrams and questions on regional lines. Useful for method of map-drawing.

6. THE TEACHING OF GEOGRAPHY.

*THE TEACHER'S ENCYCLOPÆDIA, edited by Prof. Laurie: The Caxton Publishing Company, seven volumes, 7s. 6d. each.

A new publication. In Vol. II. there is an excellent article on the methods of geographical teaching on modern lines.

*PRINCIPLES AND METHODS OF TEACHING, by J. Welton: University Tutorial Press, 5s. 6d.

The articles on Geography and Nature Study are good from the *method* point of view.

*SUGGESTIONS FOR THE CONSIDERATION OF TEACHERS: The (English) Board of Education (1905), 8d.

*THE TEACHING OF GEOGRAPHY, by L. W. Lyde: Blackie & Son, 1s.

*THE DEVELOPMENT OF GEOGRAPHICAL TEACHING OUT OF NATURE STUDY, by H. J. Mackinder: George Philip & Son, 6d. *net*.

THE GEOGRAPHICAL TEACHER, published for the Geographical Association: George Philip & Son, quarterly, 1s. 6d. per number.

THE SCOTTISH GEOGRAPHICAL MAGAZINE, published monthly by the Scottish Geographical Society: 12s. p.a.

7. APPARATUS FOR PRACTICAL GEOGRAPHY.

[Most of the scientific apparatus recommended below can be obtained through the Education Department's contractors — Messrs. Heynes, Mathew Ltd. (Scientific Apparatus Department), Adderley Street, Capetown. Prices are given in their catalogue of scientific apparatus. The catalogue will be posted to any training centre if application is made to the firm. See also list of apparatus in *A Class Book of Practical Geography*, by Young & Fairgrieve, pages 161 and 162. The Departmental Instructor in Nature Study and Science will be glad to advise teachers with regard to special pieces of apparatus or equipment.]

*Room Thermometer.
*Chemical Thermometer (—10°c. to 110°c.).
*Maximum and Minimum Thermometer.
*Small Magnet.
*Barometer Tube (siphon form).
*Board for Barometer (with gouged hole, clamps, and screws).
*Metre Stick (for barometer) cut to 32 inches.
*Mercury, ½lb.
Aneroid Barometer.
*Rain Gauge, *or*
*Filter Funnel (5in. diameter) and Measuring Cylinder (100c.c.).
Wet and Dry Bulb Thermometer.
*Tape Line, *or* *Surveyor's Chain.
*Pocket Compass.
*Plasticine, *or* *Clay. (See EDUCATION GAZETTE, page 314).
*Boards, *or* *tin plate (paraffin tins beaten out) on which to model relief maps.
*Plane Table (see Young & Fairgrieve, page 162), *or* *Drawing board, clamp, camera tripod stand, spirit level.
*Globe (with map of world on surface).
Slate Globe.
*Tellurian.

Geographical Reference Library.

In the Autumn number of the *Geographical Teacher* Mr. J. F. Unstead, M.A. (Lecturer in Geography, University of London), contributes a short paper on the above subject. The useful list of books suggested is grouped under five headings,—General Geography, Atlases, Physical and Bio-Geography, Human Geography, and School Books (illustrative of modern methods of teaching). Altogether fifty-three publications are mentioned, and the total cost is £36; but the books in each section are graded (1) for the needs of teachers who have less advanced classes; (2) for teachers who have to make a more thorough study; and (3) for still more advanced work. The full library may therefore be split into three collections costing £11, £11, and £14, respectively. The publications comprised in the first (elementary) group are given in the appended list:—

General Geography.

Chisholm, G. G., Europe, Vol. II. (*Stanford*), 15s.
Mackinder, H. J., Britain and the British Seas (2nd edition), (*Oxford Press*), 7s. 6d. net.
Herbertson, A. J. and F. D., Europe, Asia, Australasia, Africa, N. America, Central and S. America (*Black*), 2s. 6d. each.
Geographical Teacher, Vols. I.-III. (*Philip*), (bound), £1 2s. 6d.
Mill, H. R., International Geography (*Macmillan*), 15s. net.

Atlases.

Bartholomew, J., Atlas of the World's Commerce (*Newnes*), 15s. (about).
Ravenstein, Systematic Atlas (*Philip*), 15s.
Stieler, Hand-Atlas (*Perthes, Gotha*), £1 18s.

Physical and Bio-Geography.

Davis, W. M., Elementary Meteorology (*Ginn*), 10s.
Davis, W. M., Elementary Physical Geography (*Ginn*), 5s. 6d.
Dryer, C., Lessons in Physical Geography (*American Book Co.*), 6s. (about).
Gilbert, G. K., and Brigham, A. P., Introduction to Physical Geography (*Appleton*), 5s. net.
Huxley, H., and Gregory, R. A., Physiography (*Macmillan*), 4s. 6d.
Mill, H. R., Realm of Nature (*Murray*), 5s.

Human Geography.

Chisholm, G. G., Hand-book of Commercial Geography (*Longmans*), 15s. net.
Haddon, A. C., The Study of Man (*Murray*), 6s. net.
Herbertson, A. J. and F. D., Man and his Work (*Black*), 1s. 6d.

School Books (illustrative of modern methods of teaching).

Dodge, R. E., Elementary and advanced Geographies (*Rand, McNally & Co*), $1·85.
L'Estrange, P. H., A Progressive Course in Comparative Geography (*Philip*), 6s. net.
Lyde, L. W., The World (*Black*), 3s. 6d.
Herbertson, A. J., The Oxford Geographies, Vols. I.-III. (*Oxford Press*), 6s.
Mackinder, H. J. Elementary Studies in Geography: Part I., Our Own Islands (*Philip*), 2s. 6d.
Reynolds, J. B., World Pictures (*Black*), 2s.
Reynolds, J. B., British Isles, Europe, the Americas (*Black*), 2s. each.
Simmons, A. T., and Richardson, H., Introduction to Practical Geography (*Macmillan*). 3s. 6d.
Tarr, R. S., and McMurray, F. M., Geography in Three Books (*Macmillan*), 12s. 6d.

NATURE STUDY.

XXII. NATURE STUDY IN THE UPPER STANDARDS—(*Contd.*)

List of Books and Apparatus.

By A. B. Lamont, M.A., B.Sc., Departmental Instructor.

This list of books and apparatus is published as an appendix to the articles on Nature Study in the Upper Standards, Nos. XVIII. to XXI. of this series. Books specially recommended for the school libraries of upper standards are marked with an asterisk. For the sake of convenience the books and apparatus have been classified under the headings of subjects that have been discussed in the above articles. Teachers who desire further advice with regard to any special works are requested to communicate with the Departmental Instructor, who will be pleased to assist them in the selection of books for school libraries or for teachers' reference libraries. At the same time the writer recognises that this list, prepared as it has been without complete catalogues of reference, will necessarily be incomplete; and he will esteem it a favour if publishers and teachers will write to him directing his attention to notable omissions, so that when the list is published in pamphlet form later it may be as up-to-date and as complete as possible.

NATURE STUDY.

1. Books of Reference.

*The Aims and Methods of Nature Study, by Rennie—South African Edition by Dr. Rattray: University Tutorial Press, 3s. 6d.
This book is specially recommended to the attention of South African teachers. It has been rewritten from a South African point of view, and contains types familiar to South African children.

*The Book of Nature Study, edited by Farmer: Caxton Publishing Co., 6 vols., 7s. 6d. each.
Specially recommended for libraries of High Schools and Training Colleges.

An Introduction to Nature Study, by Stenhouse: Macmillan & Co., 3s. 6d.

*A Nature Study Guide, by Furneaux: Longmans, 3s. 6d.

*Scouting for Boys, by Baden-Powell: Pearsons, 1s.

The Elements of Biology and Physiology, by Hunter: The American Book Co., 7s. 6d.
A useful book for those who are teaching nature study or hygiene.

*The Natural History of Animals, edited by Davies: Gresham Publishing Co., 4 vols., 10s. 6d. each.

*South African Zoology, by Gilchrist: Maskew Miller, 10s. 6d.
Useful for the purposes of classification; describes in detail several South African types.

A First Book of Zoology, by Beddard: Macmillan & Co., 1s. 6d.

First Studies in Plant Life, by Atkinson and Wood: Ginn & Co., 2s. 6d.
Suitable for hints on experimental work with plants.

Plant Biology, by Cavers: University Tutorial Press, 3s. 6d.
An excellent book for teachers of botany.

Nature Study in Plant Life, by Scott Elliot: Blackie & Son, 3s. 6d.

A First Book of Botany, by Healey: Macmillan & Co., 1s. 6d.

First Lessons in Botany, by Cooper: Blackie & Son, 6d.

*Plants and their Ways in South Africa, by Stoneman: Longmans, 4s. 6d.

2. The Teaching of Nature Study.

Memorandum on Nature Study and Science: Scotch Education Department, 3d.

Suggestions on Rural Education, Nature Study and School Gardening: English Board of Education, 3d.

The Formation of Natural History Collections: Education Department's Pamphlet No. 19: Government Stationery Office, 1d.

How to Teach Nature Study, by Hoare: Sedgwick and Jackson, 3s. 6d.
Contains useful hints on the teaching of Nature Study—mainly on the plant side.

Nature Study and Life, by Hodge: Ginn & Co., 7s.

Nature Study and the Child, by Scott: Heath & Co., 6s.

The Primary Curriculum, by Hayward: Ralph, Holland & Co., 4s. 6d.

The Principles and Methods of Teaching, by Welton: University Tutorial Press, 5s. 6d.
The last two are books on school method. They contain useful lists of books on Nature Study.

3. Nature Study Readers.

*Natural History: Harmsworth, 3 vols., 10s. 6d. each.
An excellent natural history for children in upper standards.

*Popular Science: Harmsworth: Central News Agency, Cape Town, 7d. net per part.
This publication is now being issued in fortnightly parts, of which over twenty have already appeared. The books are divided into sections dealing with: the universe, the earth, life, plant life, animal life, man, health, power, industry, commerce, society, and eugenics. An excellent book for libraries of high schools and training colleges, and for teachers' reference libraries.

*The Children's Magazine (Children's Encyclopædia), Harmsworth: The Central News Agency, 7d. net monthly.

*The Little Paper: Harmsworth, 6 copies per month for a year, 4s. 6d.
The Little Paper is given gratis with the Children's Magazine; it is specially prepared for boys and girls. Useful for the teaching of geography and nature study in upper standards.

*Marvels of the Universe: Hutchinson, 24 parts, 7d. net each.

*A Popular Natural History, by Scherren Cassell & Co., 3s. 6d.

*The Snakes of South Africa, by Fitzsimons: Maskew Miller, 12s. 6d.

*The Monkeyfolk of South Africa, by Fitzsimons, Longmans, 5s.

*A Rural Reader for South Africa, by Lamont: Macmillan & Co., 2s. 6d.

*The Animals of Africa, by Bryden: Sands & Co., 2s. 6d.

*The Man Eaters of Tsavo, by Patterson: Macmillan & Co., 1s. net.

*Jock of the Bushveld, by Fitzpatrick: Longmans, 6s. net; abridged ed., 3s.; school ed., 1s. 6d.

*The Greenwood Tree: Arnold, 1s. 6d.
A selection of nature study pieces.

*A Nature Reader, by Cockburn and Speight: Hodder & Stoughton, 2s. 6d.
An anthology of literary gems dealing with nature study subjects. The illustrations are reproductions of the works of great masters.

*The Ruskin Nature Reader: Dent, 2s.
Similar to above.

*Readable Books in Nature Study: Macmillan & Co., 1s. 6d. each.
Threads in the Web of Life, by Prof. and Mrs. Thomson.
Tillers of the Ground, by Miss Newbigin.
The Wonders of Physical Science, by Fournier.

*The Story Series: Newnes, 1s. each.
Bird Life, by Pycraft.
Plant Life, by Grant Allan.
Animal Life, by Lindsay.
The Stars, by Chambers.
etc., etc.

*The Natural History of Selborne, by Gilbert White: Everyman's Library (Dent), 1s. net.

*A Naturalist on the Amazon, by Bates: Everyman's Library, 1s. net.

*Walden, by Thoreau: Everyman's Library, 1s. net.

*Wild Life in a Southern County, by Jefferies: Nelson, 1s. net.

*Voyage in the Beagle, by Darwin: Everyman's Library, 1s. net.

The last five books are nature study classics, and are chosen as representative books of famous writers on nature study.

GEOGRAPHY

1. Reference Books.

A Regional Geography for Intermediate Classes, by Mort: Oliver & Boyd, 1s. 9d.
An excellent short geography on regional lines.

A Regional Geography of the British Empire, by Mort: Oliver & Boyd, 6d.
The Empire in outline, excluding the British Isles.

A Progressive Course of Comparative Geography, by l'Estrange: Philip & Son, 6s.
An excellent reference book for teachers.

A Physical Geography for South African Schools, by du Toit: Cambridge Press, 5s.
A new book: specially recommended to teachers of the upper standards and to instructors of pupil teachers.

A First Book of Physical Geography, by Carey: Macmillan & Co., 1s. 6d.

*South African Geology, by Schwartz: Blackie & Son, 3s.
An interesting and simple account of South African Geology.

*A Guide to South Africa, by the Union-Castle Co.: Juta & Co., 2s. 6d.

Modern Geography, by Newbigin, in the Home University Library: Williams & Norgate, 1s. net.
A simple explanation of the aims and methods of modern geography.

Climate and Weather, by Dickson, in the Home University Library: Williams & Norgate, 1s. net.
A companion volume to *Modern Geography*.

An Introduction to Practical Geography, by Simmons and Richardson: Macmillan & Co., 3s. 6d.

A Class Book of Practical Geography, by Young and Fairgrove: Philip & Son, 1s. 6d.

The Union Agricultural Journal: Government Stationery Office, 2s. per annum.
Contains monthly rainfall records for various places in the Union of South Africa.

*Hints to Meteorological Observers, by Marriott: Stanford, London, 1s. 6d.
Contains a full account of meteorological methods.

*Whitaker's Almanack, 1s.

2. The Teaching of Geography.

Memorandum on the Teaching of Geography, by the Scotch Education Department, 3d.

Suggestions for the Consideration of Teachers: English Board of Education, 8d.

Report on a Conference on the Teaching of Geography in London Schools: King & Son, London, 1s.

The Teaching of Geography, by Lyde: Blackie & Son, 1s.

The Development of Geographical Teaching out of Nature Study, by Mackinder: Philip & Son, 6d. net.

The Teaching of Geography in Elementary Schools, by Archer: A. & C. Black, 3s. 6d.

The Geographical Teacher: Philip & Son, quarterly, 1s. 6d.

The Scottish Geographical Magazine, 12s. per annum.

The Primary Curriculum, by Hayward: Ralph, Holland, 4s. 6d.

The Principles and Methods of Teaching, by Welton: University Tutorial Press, 5s. 6d.
See note under *Nature Study* section.

3. Geographical Readers.

*The World and its People: Nelson.
Europe (1s. 6d.), *Africa* (1s. 6d.), *Asia* (1s. 6d.), *America* (1s. 6d.), and the *British Empire* (1s. 10d.) constitute separate volumes. Useful as alternative readers in and above Standard V.

*Lands and their Stories: Blackie & Son, 1s. 9d. each.
Europe and its People, *Our Empire Over-seas*: suitable for Standards V. and VII. respectively as alternative readers.

*Round the World: T. C. & E. C. Jack, 1s. 6d. each.
Europe, *Asia*, *Africa*, *America*, *Australasia*, *Our Colonial Cousins* are separate volumes. Useful as alternative readers.

*Elementary Studies in Geography, by Mackinder: Philip & Son, 2s. each.
I. *Our Own Islands*, II. *Lands beyond the Channel*, III. *Distant Lands*, IV. *The Nations of the Modern World*. Volume IV. deals specially with recent world-history.

*The Scholar's Book of Travel: Philip & Son, 1s. 3d. each.
Selections from the writings of travellers and explorers for class reading. Volumes are: *The British Isles*, *Europe*, *Other Lands*, *The British Empire*.

*Descriptive Geography, by A. J. and F. D. Herbertson: A. & C. Black, 8 vols., 2s. 6d. each.
Selections from the writings of modern travellers. The series includes *Africa*, *The British Isles*, *Europe*, *Asia*, *North America*, *Central and South America*, *The British Empire*.

*Pictorial Geographies: A. & C. Black, 1s. 6d. each.
An excellent series on regional lines; includes: *Europe in Pictures*, *The British Isles in Pictures*, *The British Empire in Pictures*, *The World in Pictures*.

*Peeps at Many Lands and Cities: A. & C. Black, 1s. 6d. each.
Each book contains twelve full page illustrations in colour. Specially suitable for school libraries. Series includes: *Australia*, *Belgium*, *Canada*, *Ceylon*, *China*, *Denmark*, *Edinburgh*, *Egypt*, *England*, *France*, *Germany*, *Greece*, *Holland*, *Holy Land*, *Hungary*, *Iceland*, *India*, *Ireland*, *Italy*, *Japan*, *London*, *Morocco*, *New Zealand*, *Norway*, *Paris*, *Portugal*, *Rome*, *Russia*, *Scotland*, *South Africa*, *South Seas*, *Spain*, *Sweden*, *Switzerland*, *Turkey*, *Wales*.

*Africa as seen by its Explorers, by Webb: Arnold, 2s.

*The Romance of South Africa, by Colvin: Jack, 7s. 6d.

*The Cape of Adventure, by Colvin: Jack, 10s. 6d.

*Man in Many Lands, by Lyde: A. & C. Black, 2s. 6d.

*Man and his Work, by Herbertson: A. & C. Black, 1s. 6d.

School libraries for upper standards should also contain examples of works on African travel by men like Mungo Park, Speke, Burton, Livingstone, Stanley, Drummond, and Sir Harry Johnston; and on travel in other countries by such men as Anson, Cook, Darwin, Bates, Whymper, and Dufferin. Many of these books of travel can be got in the cheap editions, such as Everyman's Library (Dent), Nelson's Shilling Library, Blackie's Library of Famous Books, and the World's Classics.

4. Pictures.

The importance of pictures in the teaching of Geography has already been emphasised in these articles, and need not be referred to again. Several of the series mentioned in the previous paragraph should be useful in this respect, notably *Peeps at Many Lands and Cities* and *Pictorial Geographies*. In addition to these the following may be noted:—

Geographical Pictures: A & C. Black; in packets of six, 6d. per packet.
Pictures of types of geographical scenery from photographs.

*World Pictures, by Reynolds: A. & C. Black, 2s.
Regional geography illustrated by accurate types of scenery.

Picture Postcards.

*View Albums.
Various towns and countries.

*Illustrated Weeklies, 6d. per week.
e.g., "The Sphere," "The Illustrated London News."

5. Maps and Atlases.

The trend of modern geographical teaching is to make more use of the physical (orographical) wall map and less use of the political map. Principals should give this matter their serious consideration when ordering new maps for their schools. In this relation it may be noted, in passing, that maps which show three or four aspects of one country on the same sheet are not to be recommended, as, for obvious reasons, they are not best suited for teaching young children, whose attention must be concentrated on one subject at a time. For particulars regarding wall maps and wall atlases teachers should consult the catalogues of Bacon, Johnston, the Oxford Press, and Philip & Son. The last named firm's recent production, *A Comparative Wall Atlas of Europe*, is cheaply and excellently produced. Eight maps, each 43 by 33 inches, show Relief, Political Map, Summer Climate, Winter Climate, Temperature, Vegetation, Economic, Population, and are mounted as a wall atlas on cloth for 21s. The series is to include Europe, British Isles, Asia, Africa, North America, South America, and Australasia.

The following is a list of maps, etc., suitable for use in the upper standards:—

An Atlas for South African Schools: Nelson, 1s. 6d.

*An Advanced Atlas for South African Schools: Nelson, 4s.

*The Edinburgh School Atlas: W. & A. K. Johnston, 1s.
An up-to-date atlas on regional lines; suitable for advanced pupils and for pupil teachers.

Physical Test Maps: Johnston, 1d. each.
A new series showing contours, etc., but no names; names to be filled in by pupils during the lesson.
List includes Africa, The Alps, N. America, S. America, Asia, Australia, S.E. Europe, Europe, British Isles, The Middle East, etc.

Contour Outline Maps: Philip & Son, ½d. each.
Outline maps with contour lines. For complete list see catalogue.

Diagrammatic Atlas of the Empire: A. & C. Black, 1s.

Geographical Diagrams, by Snape: A. & C. Black, 1s 4d.
Contains diagrams and questions on regional names.

6. Apparatus.

The following prices are quoted from the list of Messrs. Heynes, Mathew, Ltd., Capetown:—
Room Thermometer, 1s. 9d.
Maximum and Minimum Thermometer, 7s. 6d.
Wet and Dry Bulb Thermometer, 10s. 6d.
Barometer tube (siphon form), 1s. 6d.
Board for barometer tube (with screws and clamps), 1s. 6d.
Metre scale for barometer, 2s. 3d.
Mercury (for barometer), ½ lb., 2s. 3d.
Aneroid Barometer, 27s. 6d.
Rain Gauge, 17s. 6d.

For further details regarding Geographical books and apparatus see Education Gazette, Vol. XI., No. 14, 30th November, 1911.

MANUAL TRAINING.

1. School Gardening.

See List of Books in Education Gazette, Vol. X., No. 19, 16th March, 1911.

2. Modelling.

Geographical Modelling: Harbutt, Bath, 3d.
Plasticine for the Science Teacher: Harbutt, Bath, 3d.

3. Woodwork.

Manual Training (Woodwork), by Morrison: Longman, 3 vols., 1s. each.
Contain examples showing the relation between woodword and nature study in the Departmental curriculum.

DRAWING.

A Manual of Drawing, by Rawson: Longmans, Part II., 5s.

HYGIENE.

Good Health, by Ravenhill: Gunn & Co., 1s. 6d.
The Laws of Health: McDougall, 6d.
Simple Lessons in Health and Habits: Blackie, 8d.
Primer of Hygiene, by Reynolds: Macmillan & Co., 1s.
Science of Common Life, by Simmons and Stenhouse: Macmillan & Co., 2s. 6d.
This book will be found of service in girls' schools where the instruction in Physical Science is illustrated by examples met with in everyday home life.

Popular Science (see Nature Study Readers above).

Course in Geography

Dr Shand moved: "That there be a course in Geography."

This was agreed to and the syllabus submitted by Dr Shand was provisionally approved of as to paragraph (1) thereof and the question of ways and means was referred to the Chairman's Committee in consultation with Dr Shand. Paragraph (2) was referred to a special Committee consisting of Drs Shand, Blommaert and Goddard with a view to the further development of the practical course referred to in paragraph (2) of the memorandum submitted by Dr Shand, the latter being appointed Convenor.

The syllabus of such projected course in Geography submitted by Dr Shand reads as follows:

SYLLABUS OF A PROJECTED PRELIMINARY COURSE IN GEOGRAPHY.

Theoretical Course:

The Earth as planet. Its form and constitution. Its position in the celestial sphere. Its motions. Special relations to sun and moon. Consequences of Planetary Relations. Diurnal and seasonal changes. Planetary winds. The Trade Wind circulation. Tides. Ocean Currents. Determination of position and Altitude. Instruments. Methods of representation. The chief methods of map projection. Relief maps. Section-drawing.

Surface features. Positive and negative land forms and their distribution at the present day. Topography of Africa in detail.

Meteorology and Climatology. Determination of temperature, insolation, rainfall, etc. Climatic zones. Climatic control of habitability. Climates of S.Africa.

The cycle of Erosion. Action of rain, rivers, ice, etc. Land forms developed by erosion and deposition. Erosion as affected by climate.

Earth Structure. Constitution of the lithosphere. Rocks and their origins. Rock structures. Structures due to movement. Influence of structure upon erosion.

Useful rocks and minerals. Occurrence and association of ores. Effect of mining and metallurgy in the history of civilisation and of geographical discovery.

Strand line displacements. Historical and geological evidence of displacements. Effects upon topography and coast-line.

Land Forms developed by folding, elevation and subsidence. Classification of mountains, plains, valleys, islands, etc.

Description of Existing Continents in terms of the above. Former extension of continents. Ancient land connections and their importance.

Climate and Topography in relation to plant and animal life. Zones of vegetation and the interrelation of animal and plant life.

Climate and Topography in relation to man and his activities. Geographical factors affecting early civilisations and migrations.

(Ethnography, Bio-Geography, Political and Commercial Geography, and the History of Geographical Discovery remain for later treatment.)

II. A Practical Course in surveying, map-drawing, section-drawing, interpretation of maps, and meteorological observations to run parallel with the above.

ESTIMATE OF COST.

OF EQUIPMENT REQUIRED FOR COURSE ON PREVIOUS PAGE.

x	Relief maps and globes	£10
x	Geographical Models	£10
x	Atlas of Geographical Forms	£15
x	Maps and Charts	£10
	Practice Globes	£5
	Meteorological Outfit	
	Barometer	£6
	Barograph	7
	Thermograph	8
	Anemometer	6
	Hypsometer	4 £4
	Max. and Min. Thermometer	1
	Hygrometer	3 £3
	Rain-Gauge	£5
x	Petty items (map mounting, etc.)	9
		£100.
x	Map cabinet, say	£20 (to be built to measure).

Total Expenditure necessary, £120.

(x Items indicated thus are required in any case in connection with the ordinary courses in geology, so that the additional expenditure rendered necessary by the course in geography does not exceed £50.)

S.J.Shand,

10:2:1913.

Report of Committee on Further Development of Geography Course

APPENDIX 4.B

The committee appointed to report on the further development of the proposed geography course met on 8th inst.

It was resolved, subject to the provision by Council of the necessary apparatus to recommend the institution of a course in geography involving the co-operation of the departments of geology, zoology, and history, this course to commence in the first term of 1914 and to proceed in accordance with the following syllabus :-

1st and 2nd terms. — Physical geography, meteorology, climatology and cartography, theoretical and practical course.

Prof. Sharland. 3 or 4 hours weekly

3rd term. — Biogeography and anthropogeography, with the elements of ethnography.

Prof. Goddard. 3 hours weekly

4th term. — Political geography (a) in general, (b) of South Africa in detail. Economic geography of South Africa or other country. A subject from the history of geographical discovery (for 1914, the discovery of the sea route to India)

Prof. Blommaert. 3 hours weekly

The committee resolved to recommend the following necessary expenditure for meteorological instruments, maps, etc. — Geology dept., £120; Zoology dept., £20; History dept, £20.

The committee further recommends that the provision hereby made for the teaching of geography be regarded as of a temporary nature only, and that as soon as it shall be proved that a demand exists for geographical instruction, that demand should be met by the appointment of an independent professor or lecturer of geography.

A. J. Sharland, (convener)
8th May, 1913.

4. The following Report of the Special Committee on Geography in the Matriculation and Certificate Examinations was submitted by Dr. Jenkins.

GEOGRAPHY in Matric^n Certificate Exam^s.

REPORT OF THE SPECIAL COMMITTEE APPOINTED TO REPORT UPON THE QUESTION OF INCLUDING GEOGRAPHY AS A SUBJECT IN THE MATRICULATION AND CERTIFICATE EXAMINATIONS.

(Submitted 30th June, 1913)

Dr. Jenkins.

Committee.

Dr. Jenkins	Assessors Mr. W. Baxter
Prof. Notcutt	Mr. S. Mason
Mr. Whitton	Prof. Shand

The Committee reports that it has adopted the following recommendations:

A. Matriculation Examination.

That Geography be added as an italicised subject to Group IV. (See Matriculation Pamphlet p. 30).

B. Senior Certificate Examination.

That Geography be added to the subjects in Group IV. (See Pamphlet p. 22).

C. Junior Certificate Examination.

GEOGRAPHY

(1) That the subjects be re-arranged as follows: (See Pamphlet p. 3)

Group I.

As at present.

Group II.

As at present with the omission of Greek and History.

Group III.

Greek, History, Geography.

Group IV.

As at present for Group III.

(2) That Group I be compulsory and that one subject be taken from each of the three remaining groups and one optional subject from any one of the three groups.

D. That the syllabus in Geography be as follows:

MATRICULATION AND SENIOR CERTIFICATE EXAMINATIONS.

I. POLITICAL AND PRACTICAL.

(a) The Geography of the British Empire, and of the rest of the World, in outline.

Attention should be directed to the following aspects of the several regions:- The broad contrasts and chief features of the land-relief; coastal outlines; water-sheds and chief river basins; prevailing winds; sea currents; rainfall; climatic conditions and their effect on agriculture; distribution of plants and animals; political divisions; the people and their occupations; trade and commerce; government.

(b) The drawing and interpretation of topographical maps; the measurement of heights, distances and directions on such maps; the modes of showing natural features (relief and drainage, etc.) and artificial features (roads, railways, etc.); the reading of weather charts; and the solution of problems on local and standard time.

Map projections: general principles of projection of globe on cylinder, cone and plane: the construction and properties of the following projections - Mercator, Simple conical, Bonne, Flamsteed, Stereographic: construction of nets for these projections.

II. PHYSICAL.

The Earth and the Solar System. The form and size of the globe; its movements; Day and Night; the Seasons; chief climatic Zones.

The Earth's surface: Distribution of land and water; the relief of land areas and the floor of oceans.

The Atmosphere: its composition, temperature, pressure, and movements (winds, storms, rain, snow, fog, etc.)

The Sea: its composition and movements (waves, currents, tides, etc.); deposits on ocean floor.

The Land: the earth's crust, its structure and movements; earthquakes and volcanoes; their phenomena and distribution.

The Work of Water on Land: the sea and its waves; rain and rivers; deltas, lakes and springs; glaciers and ice sheets.

JUNIOR CERTIFICATE EXAMINATION.

I. POLITICAL AND PRACTICAL.

(a) The Geography of Africa South of the Equator, and of the rest of the world in outline.

Attention should be given to:- The chief features of the land-relief (watersheds, riverbasins, plains etc); coastal outlines; prevailing winds, and other climatic conditions; distribution of animal and plant life; Political divisions; towns and people; Trade, industries, and commerce; government.

(b) Map-Drawing. Candidates are expected to be able to identify maps without names, and to insert upon such maps the position of geographical features; also to work problems as to local and standard time.

II. PHYSICAL.

The Earth and the Solar System in general: The form and size of the globe. Its movements. Day and Night. The Seasons. Chief climatic Zones.

The earth's surface: distribution of land and water; the relief of land areas and the floor of oceans.

The Sea: Its movements (waves, currents, tides, etc.)

The Land: Its movements; earthquakes and volcanoes, their phenomena and distribution.

The Work of Water in its various forms: (rain, glaciers, rivers, etc.)

It was resolved
(ii) that authority be granted to circulate the draft syllabus among teachers of the subject, with a view to obtaining their suggestions
(i) that the Report be referred to the School Examinations Committee for consideration and report.

Geography in Matriculation and Certificate Exams

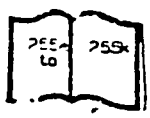
(e) Inclusion of Geography as a subject in the Matriculation and Certificate Examination:

The Committee recommends

(i) That in the Matriculation and Senior Certificate Examinations Geography be included as an additional subject in the Science group (II for Matriculation and IV for Senior Certificate) i.e. not in Group IV as proposed by the Special Committee of the Council.

(ii) That in the Junior Certificate Examination Geography be included as an additional subject in Group III (i.e. with Mathematics and Sciences and not in a separate group with Greek and History as proposed by the Special Committee of the Council.

(iii) That the proposed syllabuses and the criticisms thereon from certain teachers be forwarded to the University Council. (See Annexure A).



Paragraph I (e) be referred to the Examinations Committee for report on a proposal to combine the subjects of History and Geography.

ANNEXURE A.

SYLLABUSES IN GEOGRAPHY, AND

CRITICISMS THEREOF.

MATRICULATION AND SENIOR CERTIFICATE EXAMINATIONS.

I. POLITICAL AND PRACTICAL.

(a) The Geography of the British Empire, and of the rest of the World, in outline.

Attention should be directed to the following aspects of the several regions:- The broad contrasts and chief features of the land-relief; coastal outlines; water-sheds and chief river basins; prevailing winds; sea currents; rainfall; climatic conditions and their effect on agriculture; distribution of plants and animals; political divisions; the people and their occupations; trade and commerce; government.

(b) The drawing and interpretation of topographical maps; the measurement of heights, distances and directions on such maps; the modes of showing natural features (relief and drainage, etc.); and artificial features (roads, railways, etc.); the reading of weather charts; and the solution of problems on local and standard time.

Map projections; general principles of projection of globe on cylinder, cone and plane; the construction and properties of the following projections -

Mercator, Simple conical, Bonne, Flamsteed Stereographic; construction of nets for these projections.

II. PHYSICAL.

The Earth and the Solar System. The form and size of the globe; its movements; Day and Night; the Seasons; chief climatic Zones.

The Earth's surface: Distribution of land and water; the relief of land areas and the floor of oceans.

The Atmosphere: its composition, temperature, pressure, and movements (winds, storms, rain, snow, fog, etc.)

The sea: its composition and movements (waves, currents, tides, etc.); deposits on ocean floor.

The Land: the earth's crust, its structure and movements; earthquakes and volcanoes; their phenomena and distribution.

The Work of Water on Land: the sea and its waves; rain and rivers; deltas, lakes and springs glaciers and ice sheets.

JUNIOR CERTIFICATE EXAMINATION.

POLITICAL AND PRACTICAL.

(a) The Geography of Africa south of the Equator, and of the rest of the world in outline.

Attention should be given to: The chief features of the land-relief (watersheds, river-basins, plains etc.); coastal outlines; prevailing winds, and other climatic conditions; distribution of animal and plant life; Political divisions; towns and people; Trade, industries, and commerce; government.

(b) Map-Drawing. Candidates are expected to be able to identify maps without names, and to insert upon such maps the position of geographical features; also to work problems as to local and standard time.

PHYSICAL.

The Earth and the Solar System in general: The form and size of the globe. Its movements. Day and Night. The Seasons. Chief climatic Zones.

The Earth's surface: distribution of land and water; the relief of land areas and the floor of oceans.

The Sea: Its movements (waves, currents, tides, etc.)

The Land: Its movements; earthquakes and volcanoes. their phenomena and distribution.

The Work of Water in its various forms: (rain, glaciers, rivers, etc.)

LETTERS FROM

) Mother General, Dominican Convent, Newcastle (8.9.13).

I think it most useful to include Geography in the Matriculation and Certificate Examinations.
So many reteachers will be sitting for Matriculation in future and I do think all teachers should be proficient in Geography.

Head Master, Durban High School (8.9.13).

In answer to your confidential minute regarding the proposal as to the inclusion of Geography as a subject of examination:

A. I do not consider that Geography is a subject which should be introduced into a University Matriculation Examination - or into the Cape Junior Examination.

B. I doubt whether the Senior Certificate Examination would be rendered more popular by the inclusion of Geography.

C. The Junior Certificate Examination might have Geography included, but as far as B and C are concerned, I feel that already sufficient attention has been paid to the wishes of individuals whose theories of education are unproved, and which verge on the suggestions of cranks.

Speaking generally, the effort to minister to the imagined needs of those who profess that the ordinary University curriculum is faulty, as far as the Matriculation and Cape Junior are concerned, has been, more or less, a failure, as evidenced by the increased demand for the Matriculation and Cape Junior, and the tendency to ignore the Senior and Junior Certificate Examinations.

Geography can well be handled in the Junior Forms of the different schools.

(c) Principal, Durban Ladies' College (9.9.13).

I am much pleased that there is a likelihood of Geography being included in the Cape Junior Examination. I wrote to Mr. Barns, Headmaster of the Maritzburg College School last year, asking him to suggest this step. The syllabus too seems quite satisfactory. For the Senior Examination too I am strongly of the opinion that Geography should be included: the syllabus seems to me to go too deeply into the subject of Map Projections.

I do not see any real need for its inclusion in the Matriculation syllabus.

(d) Principal, Maritzburg Girls' Collegiate School (9.9.13).

I have considered the proposal to include Geography in the Matriculation and Certificate Examinations and send you herewith the result of my doing so.

A. Matriculation. I do not approve of the proposed alteration which would make Geography an alternative to History (few girls taking Greek). I consider History of much higher educational value than Geography, particularly to girls.

If it is added I should suggest its being added to Group II, its natural place. I also consider the Practical Geography, as outlined, too difficult.

B. Senior Certificate. I see no reason why Geography should not be added to Group II, as suggested, but again would consider the practical work too difficult.

C. Junior Certificate. I see no reason why Geography should not be included but do not consider that the suggested grouping would be an improvement. It would deter candidates from taking French and Latin or from taking Mathematics and Botany, the subjects taken later on by girl candidates in their Matriculation here. I think the working out of the scheme as suggested would end in girls not taking Latin and they need encouragement to do so rather than hindrance being put in their way.

Again I should suggest its being included amongst the sciences i.e. in Group III.

If it is included I should delete the words 'South of the Equator' from I.a.

(e) Head Master, Boys' Government School, Dundee (10.9.13).

With reference to the proposed inclusion of Geography in the Matriculation and Certificate Examinations I beg to state that I think such an addition to the scope of these examinations will add considerably to their educational value, though I am not in favour of the proposed regrouping in the case of the Junior Certificate Examination and would suggest that the groups be left as they are with the addition of Geography in Group II.

(f) Head Master, Senior Government School, Newcastle (11.9.13).

With regard to the draft proposals which you recently forwarded me for the inclusion of Geography in the Cape Examinations, I should be glad to see Geography so included, as it is a valuable subject, and one which has been rather neglected of late. Further, the draft as it stands is well drawn up and comprehensive, and in direct continuation of Geography as taught in Primary schools in Natal.

The only difficulty I see is the inclusion of another subject in the already crowded curriculum, or, alternately, the formation of separate classes for the separate subjects, which is hardly possible in small schools such as mine. This, however is not a general objection.

(g) Principal, Training College, Robertson (13.9.13).

I fully agree with Sections A, B and C of the proposal, and offer the accompanying suggestions with regard to Section D.

Junior Certificate Examination.

Political and Practical.

(a) The Major Natural Regions of Africa in detail, and the regions of the World corresponding to the African Regions in outline.

(b) Maps: Add Hachures, Contours, Sections (along South African Railway lines).

Otherwise to stand as suggested.

Matriculation and Senior Certificate Examinations.

1. Political and Practical.

(a) The Major Natural Regions of the World in outline.

(b) The Geography of the British Empire in detail.

Attention should be directed to the following aspects of the several regions:- As prescribed, with addition 'climatic conditions and their effect on (a) Productions, (b) Industry. (c) National character.
(b) To remain as suggested, with addition, 'the construction and use of a simple plane table, and the making of a simple flat map with the same'.

Map projections:- the construction and properties of the following projections:- Mercator, Simple conical, and Stereograph. Construction of nets for these projections.

2. Physical.

The Sea: its composition and movements (waves, currents, tides, etc.) sounding, deposits on ocean floor.

(h) Mr. J. Hutcheon, S.A.College High School, Cape Town (16.9.13).

Kindly convey my thanks to the School Examinations Committee for honouring me by submitting the proposed Syllabus in Geography for my consideration.

I have much pleasure in stating that the contents of the same seem to me to meet most admirably the requirements of such a Course as that suggested.

I would, however, beg to suggest that the form of the syllabus be slightly changed, and that a few additions be made. I have attempted to modify the scheme of study in accordance with work done by me during the past few years in preparing students for the Scotch Higher Leaving Certificate and University Examinations, and I take the liberty of enclosing a copy of the syllabus as re-arranged.

Junior Certificate.

The Geography of the World in outline and of Africa south of the Equator in detail, special attention being given to the following points.

Physical, Commercial, Political:-

The Earth a Planet. Its shape, size, and movements (Day and Night). The Distribution of Land and Water. Movements of the earth's crust, and general knowledge of the forces at work in modelling it.

Representation of the form and features of the World's surface. Maps. Latitude and Longitude. Local and standard time.

General knowledge of the great mountain systems, river systems, and coast lines of the countries of the world.

Factors affecting climate (winds, currents, etc). The great climatic regions. The belts of vegetation. The distribution of animals and the races of men.

Rise and development of the great industries of the world with special reference to those of South Africa.

Causes leading to the rise and importance of towns. Commerce. Trade routes on land and sea.

Practical:- Candidates are expected to be able to identify maps without names, and to insert upon such maps the position of geographical features.

Senior Certificate.

The Geography of the world in general and of the British Empire in detail, special attention being given to the following points:

Physical, Commercial, Political:-

The earth as part of the solar system. Its shape, size and movements. Distribution of land and water. Structure and movements of the earth's crust. Distribution of minerals. Agents at work in modelling the earth's surface. Soils. Ocean deposits.

Representation of the form and features of the world's surface. Maps. Latitude and Longitude. The commoner projections.

The factors affecting climate (in detail). Distribution of temperature - isotherms. The atmosphere - Pressure - isobars - the great wind systems - cyclones, anticyclones etc. The sea and its movements (currents, tides, etc.) The precipitation of moisture in its various forms (rain, dew, etc.)

General knowledge of the influence of climate and environment on plant and animal life, and on man.

The conditions necessary for the successful cultivation of certain plants and the rearing of certain animals (with special reference to South Africa).

The distribution of plants, animals, and races of mankind. The natural regions of the world.

The growth and development of the industries of the world.

Man's reaction on his environment, with special reference to South Africa (e.g. irrigation).

The distribution of population. The rise and growth of towns. Influence of geographical environment on the development of states.

Commerce. The markets of the world. Transport on land and sea. Storage. Trade routes.

Practical:- Candidates are expected to be acquainted with the elementary principles of surveying and to construct simple maps from their own observations: to draw sketch maps of coastlines, mountain and river systems, and maps showing the relation between climate and vegetation, distribution of minerals and industries, relief and railways, etc. to interpret contour maps and to draw sections of same: to make and interpret weather charts.

(i) Mr. H.H. van Rooijen, Bloemfontein (16.9.13).

Whilst thanking you for the opportunity offered to me for expressing my views on the draft proposals, I take the liberty of making one or two suggestions:

If it were possible to raise the minimum number of marks required for a pass in Geography e.g. to 60% I should be in favour of simplifying the syllabus for the Senior Certificate Examination, by deleting all that is said under (b).

At the same time I venture to propose reading under (a) 'The Geography of the British Isles, the Netherlands, Belgium, Germany and France, and of the rest of the World, in outline'. The countries named are those which colonised South Africa and from which our pupils or their forefathers came to South Africa.

They ought to study these countries more fully than e.g. Italy, Russia or Brazil.

For the Junior Certificate Examination I beg to propose to read under (a) 'The Geography of Africa, and of the rest of the world in outline'.

There seems to me to be no grounds to divide Africa into two parts, viz. one to the North and one to the South of the Equator. So I think we ought to stick either to the geographical tract of country, called as South Africa (South of the Zambesi and the Cunene), or we had better take the whole of Africa. Anyhow I think the Equator is not fit to be a boundary line.

I am sorry the time allotted to me for considering the proposals was so short and at the same time taken up by much work. Therefore I am not in a position to enter into detail.

(j) Principal, Public School, Darling (17.9.13).

In reply to yours of the 3rd inst. with the enclosed 'draft proposal as to the inclusion of Geography as a subject in the Matriculation and Certificate Examinations' I have pleasure in stating that I shall welcome the inclusion of this subject, which has hitherto been much neglected in many schools. The methods of teaching this subject are sure to improve if the examination questions are of a practical nature. It is gratifying to note that the Geography of Africa will be fully treated and it will soon be only too apparent that this is no longer 'the dark continent'.

In the case of the Junior Certificate Examination, which must be considered as a preliminary examination to Matriculation as well as to the Senior Certificate Examination, I should prefer to see Geography added to Group II - the rest to remain unaltered; - for I consider it desirable for all candidates to take a science subject under Group III (as at present) with a view to continuing it.

(k) Mr. James Lyle, Grey College School, Bloemfontein (16.9.13)

As requested I have considered your communication re 'Inclusion of Geography in Matriculation and Certificate Examinations' and have the following remarks to make:

(i) I believe the proposal is good from an educational point of view.

(ii) But in order to prevent the ousting of other valuable educative subjects I suggest that it be combined with History. To make this clear, let us consider the Junior Certificate syllabus amended as proposed. It seems to me that on account of expense of Science teaching Science will be dropped and Geography taken in its place. My history teacher expresses the opinion that the syllabus need not be curtailed in order to permit of Geography being combined with it. If curtailment is necessary I would suggest that Arithmetic be combined with Mathematics and then the selection would be:

(i) English or Dutch A
(ii) English or Dutch B or other modern language
(iii) History and Geography
(iv) Mathematics (Geometry, Arithmetic and Algebra)
(v) Science
(vi) Another Science (for Senior Certificate) or Latin for Matriculation.

A similar arrangement would hold in Matriculation or Senior Certificate.

(iii) In regard to syllabuses. I approve of them as a whole, and given a considerable option in questions teachers could treat the subject either from a political or from a physical point of view.

Considering that the Matriculation syllabus does not include the study of the sphere or cone I think that the paragraph on map projections could be considerably curtailed. Throughout the physical part I should like more reference to our upcountry conditions, the intermittent floods, dongas and spruits, and the action of wind and dust, with some brief sketch of South African Geology. It is difficult enough at any time to teach tides etc., but what is to be done with boys who have never seen the sea?

The weather charts are very interesting but upcountry the natural history of a depression is not such a striking thing or so well known as at the coast or on the west of Europe. The most striking fact in weather is intense radiation and its effects. These things all limit the experimental study of the subject.

In conclusion I thank you for giving me an opportunity of reading the proposals and thus briefly remarking on them.

(1) Head Master, Boys' Government School, Ladysmith (18.9.13)

In reply to your letter of the 3rd inst. on the subject of the inclusion of Geography in the Matriculation and Junior Certificate Syllabuses, I wish to say that I am emphatically in favour of such a course. I have found it necessary to drop Geography after Standard V in order to make provision for the subjects of the above examinations, and by that time they have not covered even an elementary outline of the Geography of the World. I believe that boys of South Africa, the majority of whom are destined to follow a non-professional career, would be much better equipped for their life's work, and would become much better citizens, if they had a good knowledge of the Geography of the world, as laid down in the proposed syllabuses, and the resulting mental training will not be less than that of certain of the subjects at present in the curriculum. I hope it is not out of place for me to point out, on this occasion, that it is impossible, as the syllabuses for these examinations now stand, to choose a course of instruction that will lead up to the Matriculation. We have always to introduce a new subject to pupils after they have passed the Junior Certificate Examination.

This of course leads to cramming and the education of the pupils naturally suffers.

SUGGESTED REVISION OF GEOGRAPHY SYLLABUS FOR CAPE MATRICULATION

DRAWN UP BY MR. H.D. SUTHERNS.

The Earth's Surface as a whole.

Nebular and Planetismal Hypotheses - Distribution of land and water - The broad contrasts in configuration of land masses - The chief features of land relief - Rivers and their work - Erosion and Denudation. Formation of soils, and their influence.

Volcanoes and Earthquakes. Igneous, Sedimentary, and Metamorphic rocks.

The mathematics of the sphere - Map projections. Distribution of temperature - Isotherms.
The atmosphere - Its composition. Pressure and winds. Moisture in the air. Rainfall.
The Hydrosphere - Depths - Temperature - Saltness - Currents and Tides.

Factors in the constitution of a Natural Area.

Conformation and climate. The factors which determine the distribution of population and the growth of industries. The chief natural regions of the world, and the characteristics of each. Geographical conditions which affect the growth of towns.

3. Applied Geography.

The conditions underlying the occupations, and the localization of industries, together with the chief means of communication between the various centres in the following, should be studied in decreasing detail:-

(a) Africa south of the Zambesi.
(b) Great Britain.
(c) The rest of the British Empire.
(d) Europe and N. America.

4. Candidates should be able to read and understand the conventional symbols employed in maps, and may be required to draw simple sketches of areas, correct in general proportions, but without elaborate detail.

CRITICISMS OF THE SYLLABUS SUBMITTED.

1. There seems to be no sequence in instruction, and the applied Geography precedes the Principles.

2. The British Empire does not seem to be a suitable subject for study, since it possesses no geographical unity - Historically it may be considered as a unit, but geographically it embraces representatives of every climatic region.

3. The syllabus hardly indicates the lines on which the examination will be conducted. A good deal of it lends itself to old fashioned methods, in that the relation between cause and effect is suppressed.

4. More importance should, in my opinion, be attached to the Principles (call them Physical Geography, Physiography, or what you will) and less to the Applied Geography (Political or Practical).

JUNIOR CERTIFICATE.

1. Principles of Geography.

(a) The Earth and Solar System in General. Form and size of Globe. - Movements of Earth - Day and Night - The Seasons - Distribution of Heat on Globe - Isotherms - Latitude - Longitude and Time.

(b) The Earth's Surface. Distribution of land and water - Broad outlines of Surface Relief - Earth folds - Formation of mountains - Volcanoes and Earth quakes.

(c) The Atmosphere. Pressure Belts - Isobars - Winds - Moisture in the air.

(d) Water on the Globe. Rainfall - Rivers - Deltas - Glaciers - The Ocean - Waves - Currents - Tides.

The Geography of Africa south of the Zambesi.

Position - Prevailing winds - Rainfall - Land relief - Watersheds and River basins - Character of rivers - Coastal outlines - Soil - Distribution of plants - Distribution of minerals - Distribution of population and localisation of industries - Towns and communications - Political divisions - Government - steamship routes and External trade.

Map Drawing.

Candidates should be able to read and understand the conventional symbols employed in maps, including contour lines. They will also be expected to be able to insert on a blank outline map of South Africa the position of the chief geographical features, towns, and railways.

ANNEXURE B.

JUNIOR CERTIFICATE EXAMINATION.

GEOGRAPHY AS A SUBJECT IN GROUP III.

SYLLABUS PREPARED BY THE COMMITTEE OF STUDIES.

I. PHYSICAL.

The Earth and the Solar System in general: The form and size of the globe. Its movements. Day and Night. The Seasons. Latitude and Longitude. Chief climatic Zones.

The Earth's surface: distribution of land and water; the relief of land areas and the floor of oceans.

The Sea: Its movements (waves, currents, tides, etc.)

The Land: Its movements; earthquakes and volcanoes, their phenomena and distribution.

The Work of Water in its various forms: (rain, ga glaciers, rivers, etc.)

II. POLITICAL AND COMMERCIAL.

(a) The Geography of Africa south of the Equator.

Attention should be given to: The chief features of the land-relief (watersheds, riverbasins, plains, etc.): coastal outlines; prevailing winds, and other climatic conditions; distribution of animal and plant life; Political divisions; towns and people; trade, industries, commerce, and means of communication; government.

(b) The rest of the world similarly studied, but in less detail.

III. PRACTICAL.

Map-Drawing. Candidates are expected to be able to identify maps without names, and to insert upon such maps the position of geogrpphical features; also to work problems as to local and standard time.

APPENDIX 4.G

12th August, 1916.

Dear Sirs,

By to-day's mail I am forwarding by registered book-post the MSS. of the following papers for this year's examinations:

JUNIOR CERTIFICATE: Hollands A, I Physics, Physical Science, Geography, Arithmetic

MATRICULATION: Physical Science, Zoology.

SENIOR CERTIFICATE: Mechanics, Domestic Science, Bookeeping (A and B), Physical Science, Zoology.

INTERMEDIATE: Latin, Mathematics I & II, Physics, Chemistry, Practical Chemistry (A and B), Botany.

FIRST MINING: Mathematics I & II, Chemistry, Practical Chemistry Physics.

FIRST SURVEY.
Part II. Optics and Heat.

B.A. PASS: Practical Applied Mathematics, Physics I, Zoology I & II, Practical Zoology (Morning and Afternoon).

PRELIMINARY LL.B.: Roman Law & History I & II, English Law I & II General Jurisprudence, Roman-Dutch Law.

FINAL LL.B.: Private International Law, Advanced General Jurisprudence, Public International Law, History and Principles of Roman Law, Law of Evidence.

UNION C/S. HIGHER LAW
Part I. Roman Law & History I & II, English Law I & II General Jurisprudence.

Part II. Law of Evidence.

We shall require 250 copies of each of the enclosed maps (A of the world and B of South Africa).

Yours faithfully,

Registrar.

Messrs. Bowes & Bowes,
1, Trinity Street,
Cambridge.

UNIVERSITY OF THE CAPE OF GOOD HOPE.

EXAMINATIONS COMMITTEE.

19th January, 1916.

REPORT OF COMMITTEE OF MODERATORS ON THE JUNIOR CERTIFICATE EXAMINATION.

The results of the tabulation showed that of 2644 candidates
1829, or 69.18 per cent. pass (I. class 334, II. class 710)
815, or 30.82 per cent, fail.

In 1912	1546 (62%)	passed	out of	2493	candidates	(I. class	257
						II. "	562)
1913	1320 (49.5%)	"	"	2667	"	(I. "	165
						II. "	399)
1914	1717 (64.3%)	"	"	2669	"	(I. "	186
						II. "	604)

The percentages of failures and the average marks per cent in the principal subjects for 1914 and 1915 are as follows:

Subject	1915 No. of candidates	1915 failures %	1915 average marks %	1914 No.of candidates	1914 failures %	1914 average marks %
English A	2128	8.0	48	2188	2.8	50
Dutch A	515	19.8	53	479	5.8	49
English B	516	8.3	45	479	12.9	44
Dutch B	1593	16.6	49	1655	22.0	49
Latin	2158	17.4	40	2053	7.7	56
Greek	47	23.4	40	43	18.6	47
History	1050	12.6	37	1220	17.5	34
French	289	14.5	65	283	41.6	32
German	17	17.6	63	21	23.8	60
Arithmetic	2642	11.9	48	2667	13.5	44
Mathematics	2573	5.4	56	2579	12.1	45
Physics	255	20.0	39	259	16.6	43
Chemistry	269	3.0	50	243	6.6	51
Botany	433	8.6	50	476	19.7	37
Phys.Science	1280	14.7	38	1276	15.5	40
Geography	27	0	54			

REPORT OF THE JOINT LITERATURE AND SCIENCE COMMITTEE.

ANNEXURE A (see par. I (B)).

B.A. GEOGRAPHY SYLLABUS.

Astronomic basis of Geography. Planetary relations of the Earth. Determination of latitude and longitude.

Map projections and their properties. Advantages and disadvantages of all projections in common use and of certain others which are useful for special purposes. Construction of maps on such projections.

Methods and Instruments of Surveying. Geodetic, topographic, and magnetic surveying. Practical work with theodolite, level, prismatic compass, and plane table. Determination of altitude.

Meteorology. Use of instruments, recording of observations, and interpretation of weather maps.

Climatology. An intimate knowledge of the factors determining climate and of the climatic conditions prevailing thoughout the world. Climatology of Africa in detail.

Physiography. Earth sculpture and the forms produced by it under various climatic conditions. Physiography of Africa in detail. Oceanography. Earth movements and their record in the rocks. Methods of Palaeogeography.

Biography. Life conditions of common animals and of important plants and the present distribution of such. Bearing of palaeogeography upon the latter.

Anthropogeography and Ethnology. Characters, distribution, and migrations of the chief races of mankind. Dependence of characters and civilisation upon physiographic environment.

Political and Commercial Geography of the World in general and of Africa in detail. Systems of government.

History of Geographical Discovery. Economics in relation to Geography.

COMMITTEE OF STUDIES.

21 March, 1914. 10 a.m.

ANNEXURE A

Geography (B.A. and Intermediate).

Recommendations of Sub-Committee.

1. That the Intermediate course in Geology shall be compulsory for candidates taking Geography at the B.A. Examination.

2. That Geography be a subject at the B.A. Pass Examination in and after 1916 in Groups B, C and D, viz.
   in Group B in place of Geology
   in Group C as an alternative to Geology
   in Group D as an additional subject

3. That there be two written papers carrying 420 marks and a practical examination of two days carrying 280 marks.

4. That the syllabus be as follows:

First Paper

Astronomic basis of Geography. Planetary relations of the Earth. Elementary methods for the determination of latitude and longitude.

Meteorology. Atmosphere. Solar Radiation. Temperatures of air and soil. Atmospheric pressure. Wind. Moisture. Condensation. Evaporation. Weather. Charts.

Climatology. The factors determining climate. Climatic conditions prevailing throughout the world. Climatology of Africa in detail.

Physiography. Earth sculpture and the forms produced by it under various climatic conditions. The natural Geographis regions of the world. Physiography of Africa in detail. Oceanography. Earth movements and their record in the rocks.

Second Paper

Biogeography. Life conditions of important groups of animals and plants and the present distribution of such. Bearing of Palaeogeography upon the latter.

Anthropogeography and Ethnology. Characters, distribution, and migrations of the chief races of mankind, and their relation to physiographic controls.

Social and economic conditions and their dependence upon physiographic environment. Political and Commercial Geography of a selected area (to be prescribed from time to time).

History of Geographical Discovery (in outline).

Practical Examination.

Map projections and their properties. Advantages and disadvantages of projections in common use, viz. (a) orthographic (b) stereographic (c) conic (and modifications, including Bonne and Flamsteed) (d) cylindrical (and modifications, including Mercator). Construction of maps on such projections.

Elementary methods and instruments of Surveying. Simple practical work with theodolite, sextant, level, prismatic compass, and plane table. Determination of height.

Questions on the first two paragraphs of the syllabus of the First Written paper.

—

That Geography be an Honours subject in and after 1917.

(N.B. The preparation of alternative Honours Syllabuses has been referred to the following sub-committees:

(a) Prof. E.A. Walker (convener) Prof. Fouche and Mr. Hutcheon.

(b) Professors Shand (convener), Goddard and A. Young.

With reference to paragraph 5

The LITERATURE SUB-COMMITTEE reports that it is of opinion that no such course should be attempted for the following reasons:

(a) To make an adequate Honours Course in this direction, it would be necessary to duplicate much of the work being done in the Honours History and Economic Courses. It would be better for students to take one or other (or both) of these courses as a continuation of the Pass Geography Course.

(b) The Pass Geography Course is itself in the experimental stage and it seems to us inadviseable to draw up an Honours scheme until it has proved itself in practice.

The SCIENCE SUB-COMMITTEE reports that it is of opinion that it is at present inadviseable to attempt to draw up an Honours syllabus until some experience has been gained in the working of the Pass syllabus.

MENTAL AND MORAL SCIENCE:

Honours Examination.

Third Paper.

Ancient Metaphysics from Thales to Plato (inclusive) with Plato's "*Theætetus*" (any translation).

Fourth Paper.

Modern Moral Philosophy from Butler to Green (inclusive) with Butler's *Sermons* I-III, Kant's *Foundations of the Metaphysics of Ethics* (selections in Watson's *Selections from Kant*), Mill's "*Utilitarianism.*"

Green's *Prolegomena to Ethics*—*Books III and IV.*

ETHICS AND POLITICS:

Pass Examination.

Second Paper.

Plato—*Republic* (trans. Davis and Vaughan or Jowett or Lindsay).

HISTORY:

Honours Examination.

Third Paper.

Period of European History: 1713-1789.

Fourth Paper.

Period of South African History: Period of the Van der Stels.

GEOLOGY:

Honours Examination.

Third Paper.

PRESCRIBED PAPERS.

Schwarz—*Geol. Survey of Tulbagh, Ceres and Worcester.* (*10th Annual Report Geol. Com. Cape Colony.*)

Hall—*Contact Metamorphosis in Western Transvaal.* (*Trans. Geol. Soc. S.A. vol. XII.*)

Young—*Petrological Notes on Witwatersrand.* (*Trans. Geol. Soc. S.A. vol. X.*, and *Trans Geol. Soc. S.A. vol. XII.*

Young—*Calcareous Rocks of Griqualand West.* (*Trans. Geol. Soc. S.A. vol. IX.*)

Skeats—*Origin of Dolomites.* (*Q.J., vol. LXI, No. 241.*

Mellor—*Waterberg Tinfields.* (Trans. Geol. Survey *Memoir No. 4.*)

du Toit—*Copper Nickel Deposits of the Insizwa.* (*XV Ann. Rep. Geol. Com. Cape Colony.*)

Hall—*Geology of Murchison Range.* (*Trans Geol. Surv. Memoir No. 6.*)

Schwarz—*Post Jurassic Earth Movements in South Africa* (*Geol. Mag.*)

Rogers—*Survey of Van Rynsdorp and Namaqualand.* (*Geol. Com. Cape Colony, XVI Ann. Rep.*)

Range—*Sketch of Geology of German Namaqualand.* (*Trans. Geol. Soc. S.A. vol. XIII.*)

Range—*Geology of German South Kalahari.* (*Trans. Geol. Soc. S.A. vol. XV.*)

Seward—*Fossil Floras of Cape Colony.* (*Annals of S.A. Museum.*)

Harker—*Natural History of Igneous Rocks.* (*Methuen.*)

ALTERATIONS IN REGULATIONS AND SYLLABUSES OF THE PASS EXAMINATION TO COME INTO FORCE IN 1916.

The following alterations will come into force in 1916:—

REGULATIONS.

Regulation 2.—Add new subject: 20. Geography.

Regulation 3.—(i) The subjects under the various Groups to be arranged as below:—

Group A. (Five subjects.)

(i) Latin.
(ii) Greek.
(iii) Logic and Psychology *or* Ethics and Politics.
(iv) (v) Any two of the six following subjects:—
(*a*) English.
(*b*) Dutch.
(*c*) French *or* German.
(*d*) History.
(*e*) Economics.
(*f*) Logic and Psychology § *or* Ethics and Politics.§

[§ If not taken under (iii).]

Group B. (Five subjects.)

(i) Latin *or Greek.*
(ii) English *or* Dutch *or* French *or* German.
(iii) *Logic and Psychology or Ethics and Politics* or History or Economics.
(iv) One of the subjects under (i), (ii), *or* (iii) not already taken.
(v) One of the seven following subjects:—
(*a*) *Mathematics.*
(*b*) Physics.
(*c*) Chemistry.
(*d*) Geology.
(*e*) Botany.
(*f*) Zoology.
(*g*) Geography.

Group C. (Four subjects.)

(i) (ii) Any two of the seven ‡ following subjects:—
(*a*) *Mathematics.*
(*b*) Applied Mathematics.
(*c*) Physics.
(*d*) Chemistry.
(*e*) Geology *or* Geography.
(*f*) Botany.
(*g*) Zoology.

(iii) (iv) Any two of the six following subjects:—
(*a*) Latin.
(*b*) *Greek.*
(*c*) English *or* Dutch.
(*d*) *Logic and Psychology, or Ethics and Politics or* History, *or* Economics.
(*e*) French.
(*f*) German.

‡ Physiology may be taken as a subject by candidates for Honours in Department III.

Group D. As in 1915, with the addition of (*j*) Geography.

(ii) NOTES.—Add: (4) Every candidate taking Geography must have passed in Geology of the Intermediate Examination at least one year before his B.A. Examination.

Regulation 5.—Add: Geography. Two papers (each 210), 420; minimum, 84. Practical Examination 280, minimum 56.

SYLLABUSES.

GREEK.

Third Paper.

A to read: English passages (simple narrative or oratory) for translation into Greek.

FRENCH, GERMAN.

First Paper.

The syllabus of Section A to be as follows:

1. Meaning and value of the Science of Language. Divisions of the subject: Phonology, Morphology, Syntax, Semantics.

2. Grammar and the work of the grammarian. Descriptive, historical and comparative grammar.

3. General sketch of the life and growth of Language. Synthetic and Analytic Languages. Language and Dialect. Origin of Dialects.

4c (*French*). The Indo-Germanic and Romance Languages. Classical and Popular Latin. Gallo-Roman, Langue d'oil, Langue d'oc. Old and Modern French. French Dialects.

(*German*). The Indo-Germanic and Teutonic (Germanic) Languages. Old, Middle and Modern High German. Upper, Middle and Low German. German Dialects.

5. Written and spoken Languages. Evolution of Standard written and Standard spoken French (German).

6. The elements of Phonetics. The organs of speech and their functions. Vowels and Consonants. The classification of Vowels and Consonants. Accent and Length. Standard pronunciation of French (German).

7. Changes in the form of words. Phonetic Laws, Analogy, Popular Etymology. History of French (German) vowels and consonants in outline only.

8. History (in outline only) of Declensions and Conjugations.

9. (*French*). Extension and loss of vocabulary. Word-formation, Borrowing, etc. Formation populaire and formation savante. Doublets. Foreign elements in the French language.

(*German*). Extension and loss of vocabulary. Word-formation, Borrowing, etc. Foreign elements in the German Language.

10. Changes in the meaning of words. Generalisation, specialisation, and transference of meaning.

ECONOMICS.

First Paper.

Title. The words "with special reference to South African conditions" to be deleted.

Section C add "Economics of Socialism" (transferred from II Paper).

Section E, add "Municipal Trading and Finance" (transferred from II Papers.)

The list of books recommended to be deleted.

Second Paper.

A new Section A to be included, *viz.*, "*Stages in Economic Evolution.*"

Section A to be renumbered Section B, and the following words to be deleted:

"Free" before "village communities): "in its . . . labour" after "manorial system": "economic influence . . . capital" after "free labour": "economic results of the Crusades."

Section B to be renumbered Section C, and the following words to be deleted:

"The Augsburg capitalists. The Italian seaports." "Economic reforms of Sully and Henry IV."

Section C to be renumbered Section D, and the following words to be deleted:

"The inventions": "Foreign exchanges": "Influence of economic factors . . .trading and finance."

Section D to be deleted.

The list of books recommended to be deleted.

MATHEMATICS.

First Paper (*Algebra*):

"Properties of quadratic equations and quadratic expressions. Progressions" to be deleted.

"Properties of $\frac{ax^2 + bx + c}{a'x^2 + b'x + c'}$" to be inserted.

GEOGRAPHY.

The Syllabus to be as follows:

First Paper.

Astronomic basis of Geography. Planetary relations of the Earth. Elementary methods for the determination of latitude and longitude.

Meteorology. Atmosphere. Solar Radiation. Temperatures of air and soil. Atmospheric pressure. Wind. Moisture. Condensation. Evaporation. Weather. Charts.

Climatology. The factors determining climate. Climatic conditions prevailing throughout the world. Climatology of Africa in detail.

Physiography. Earth sculpture and the forms produced by it under various climatic conditions. The natural Geographic regions of the world. Physiography of Africa in detail. Oceanography. Earth movements and their record in the rocks.

Second Paper.

Biogeography. Life conditions of important groups of animals and plants and the present distribution of such. Bearing of Palæogeography upon the latter.

Anthropogeography and Ethnology. Characters, distribution, and migrations of the chief races of mankind, and their relation to physiographic controls.

Social and economic conditions and their dependence upon physiographic environment. Political and Commercial Geography of a selected area (to be prescribed from time to time).

History of Geographical Discovery (in outline).

Practical Examination.

Map projections and their properties. Advantages and disadvantages of projections in common use, *viz.* (*a*) orthographic, (*b*) stereographic, (*c*) conic (and modifications, including Bonne and Flamsteed), (*d*) cylindrical (and modifications, including Mercator). Construction of maps on such projections.

Elementary methods and instruments of Surveying. Simple practical work with theodolite, sextant, level, prismatic compass, and plane table. Determination of height.

Questions on the first two paragraphs of the syllabus of the First Written Paper.

ALTERATIONS IN REGULATIONS AND SYLLABUSES OF THE HONOURS EXAMINATION TO COME INTO FORCE IN 1916.

The following amended regulations and syllabuses will come into force in 1916:—

REGULATIONS.

6. Candidates for the B.A. Honours Degree in and after 1916 may present themselves for examination in any of the following Departments:—

(*a*) FOR 1916.

Departments I-IV.
I. Classics.
II. Modern Languages.
III. Mental and Moral Science.
IV. History.

Departments V-XIII.
V. Mathematics.
VI. Applied Mathematics.
VII. Physics.
VIII. Chemistry.
IX. Geology.
X. Botany.
XI. Zoology.
XII. Anatomy.
XIII. Physiology.

(*b*) AFTER 1916.

Departments I-VIII.
I. Classics.
II. English.†
III. Dutch.†
IV. French.†
V. German.†
VI. Mental and Moral Science.
VII. History.
VIII. Economics.†

Departments IX-XVII.
IX. Mathematics.
X. Applied Mathematics.
XI. Physics.
XII. Chemistry.
XIII. Geology.
XIV. Botany.
XV. Zoology.
XVI. Anatomy.
XVII. Physiology.

7. No candidate may enter for more than one Honours Department in the same year; but a candidate who has already obtained Honours in one Department may proceed to Honours in another Department at any time subsequently, provided that conditions (*a*) and (*c*) in paragraph 9 of these regulations be complied with.

† See Appendix III. for syllabus.

spcare. Lawrence, of virtuous Father virtuous Son. Avenge, O Lord, Thy slaughtered Saints. When I consider how my light is spent.

Burns—*To a mouse.*

Wordsworth—*There was a Boy. Michael. The Happy Warrior. Ode on Intimations of Immortality. Daffodils (I wandered lonely as a cloud).*

Sonnets—*Two voices are there. Once the did hold the gorgeous East in fee. The world is too much with us.*

Campbell—*Ye Mariners of England.*

Keats—Sonnet—*On first looking into Chapman's Homer.*
La Belle Dame: Eve of St. Mark.

Tennyson—*Lotus Eaters: Œnone.*

Leigh Hunt—Selections, ed. J. H. Lobban, (Camb. Univ. Press).

J. A. Froude—*Short Studies on Great Subjects*, selections (ed. Thornton: Longmans).

DUTCH (A AND B):

First Paper.

Section B: History of Dutch Literature, with special reference to Hooft, Vondel, Wolff en Deken, Bilderdijk, Van Lennep, Potgieter, *Perk en Guido Gezelle.*

Second Paper.

Section A: Hildebrand, *Camera Obscura* (tot en met *Verre Vrienden*).

Kamp en Le Roux, *Uit de Nederlandsche Lyriek van de Laatste drie Eeuwen.* Gedichten van Hooft, Vondel, Jan Luyken, Bilderdijk, Perk, Guido Gezelle.

LATIN:

Cicero—Pro Sulla.
Virgil—Æneid I.

GREEK:

Plato—Laches.
Lysias—Contra Agoratum.

II. DEGREE OF BACHELOR OF ARTS (B.A.).

REGULATIONS.

[Candidates taking English as one of their subjects must answer the questions in that subject in English.

Candidates taking Dutch must answer the questions in that subject in Dutch.

In the case of every other subject, except where otherwise provided, candidates must elect, *at the time of entering their names for the examination*, whether they will answer the questions in English or in Dutch. Both mediums may not be used in answering the same paper.

In all papers to be answered in English the questions will be printed in English, and in those to be answered in Dutch, in Dutch.]

PASS EXAMINATION.

1. No candidate will be admitted to the B.A. Examination until after the expiration of at least two academic years from the date of his passing the Intermediate Examination in Arts.

2. The subjects in which candidates for the B.A. Pass Degree may be examined will be as follows:—

1. Latin.
2. Greek.
3. Logic and Psychology.
4. Ethics and Politics.
5. English.
6. Dutch.
7. French.
8. German.
9. History.
10. Economics.
11. Mathematics.
12. Applied Mathematics.
13. Physics.
14. Chemistry.
15. Geology.
16. Botany.
17. Zoology.
18. Anatomy.
19. Physiology.
20. Geography.

3. Candidates may present themselves for examination in any of the four following Groups, provided that not more than one Group may be taken in the same year.

SCHEDULE.

SYLLABUS IN GEOGRAPHY FOR MATRICULATION EXAMINATION.

A. 1. The earth as a part of the solar system: the form and size of the earth. Day and night. The seasons. Latitude and longitude.

2. Distribution of land and water: the relief of land areas. Ocean currents and tides.

3. Distribution of sunshine, temperature, winds and rainfall in general outline. General knowledge of the distribution of vegetable and animal life: natural regions.

4. The races of mankind and their chief characteristics: distribution of population: human activities and their relation to geographical environment. Commercial products and the conditions affecting their production and distribution.

(Candidates will be expected to take a practical study of their own districts in relation to the various points dealt with above.)

B. 1. A general knowledge of the geography of the various continents.

2. The geography of Africa south of the Zambesi in detail.

PRACTICAL.

1. Finding the meridian and local midday by a shadow method.

2. Carrying out of a simple plane table survey.

3. Methods of representing surface features on maps

4. Interpretation of large scale contour maps and the drawing of sections from them.

5. Simple exercises involving the use of the globe and the representation of large areas of the earth's surface.

6. Observations of atmospheric temperature and pressure, of wind and rainfall: interpretation and construction of weather charts.

7. The graphical representation of given statistics of population, production and geographical data.

APPENDIX 5.A

GEOGRAPHY.

First Year.

1. Geography as a Subsidiary Subject. (One Year Course.)

A knowledge of the chief generalisations regarding the surface forms of the land, the movements of air and water, and the distribution of plants, animals, and man. General commercial and industrial geography. The world's peoples. The geographical factors in human activities. The cartographical representation of geographical data. The evolution of the map of the world. The geography of Africa.

2. Commercial Geography. (One year course.)

Short course of general geography introductory to the study of commercial geography.

The production, distribution and exchange of the more important commodities.

The rise, development and distribution of important industries.

The commercial geography of Southern Africa.

Books recommended: Chisholme, "Handbook of Commercial Geography" (Longmans); Bartholemew and Lyde's "Atlas of Economic Geography" (Oxford University Press).

Geography as a major subject.

(a) General Geography.

The earth as a planet.
The geological basis of geography.
Climate.
Elements of plant and animal geography.
Natural regions.
The world's peoples.
The geographical factors in human activities.
General commercial and industrial geography.
The principles of map-construction and interpretation.
The evolution of the map of the world.
The geography of Africa.

(b) More detailed study of two of the following:—

(i.) Historical Geography and History of Discovery.
(ii.) Anthropogeography.
(iii.) Economic Geography.
(iv.) Physical Geography.
(v.) The geography of a selected region, e.g., North America.

GEOGRAPHY.

Geography as a major subject.

(a) General Geography.

(b) More detailed study of three of the following:—

(i.) Physical Geography (as for Arts).
(ii.) Anthropogeography (as for Arts).
(iii.) Biogeography.
(iv.) Cartography.
(v.) The geography of a selected region, e.g., North America.

The syllabuses in Geography for external are the same as those for internal students.

The following books are recommended for the guidance of external students :—

(i) For Geography as a subsidiary subject :

Unstead and Taylor : *General and Regional Geography.* (Philip.)

Salisbury : *Physiography.* (John Murray.)

H. R. Mill : *Realm of Nature.* (John Murray.)

Du Toit : *Physical Geography.* (Cambridge University Press.)

Chisholm : *Commercial Geography.* (Longmans.)

Keane : *Ethnology.* (Cambridge University Press.)

Jacobs : *History of Discovery.* (Hodder and Stoughton.)

Hinks : *Map Projections.* (Cambridge University Press.)

Royal Geographical Society : *Hints to Travellers.*

Bartholomew and Lyde : *Atlas of Economic Geography.* (Oxford University Press.)

(ii) For Commercial Geography :

Unstead and Taylor : *Essentials of World Geography.* (Philip.)

Chisholm : *Commercial Geography.* (Longmans & Co.)

Gregory, Keller, and Bishop : *Physical and Commercial Geography.* (Ginn & Co.)

GEOGRAPHY.

First Course.

1. *Physical Geography.*

(*a*) *The Earth as a Planet.*—Its form, size, and motions; the inter-relations of the sun, earth, and moon, causing day, night, the seasons; the measurement of time, latitude, and longitude; the phases of the moon and eclipses; the structure of the earth.

(*b*) *The Atmosphere.*—The local and world distribution of pressure, temperature, and humidity; the collecting of meteorological data; the preparation of synoptic charts and of climatic maps.

(*c*) *The Hydrosphere.*—The form of the oceans; the configuration and depth of the ocean floor; the distribution of temperature and salinity; tides and currents; the preparation of hydrographic charts.

(*d*) *The Lithosphere.*—Elevation and subsidence; shore-lines; the processes of denudation, deposition, and vulcanicity, and their effects on topographical features; the making of topographic models.

2. *Cartography.*

(*a*) *Elements of Map-reading.*—Map-setting; conventional signs; representation of relief; visualization in three dimensions; special emphasis on the interpretation of contoured maps, representing glacial, fluvial, and marine topography in their various stages of evolution; planimetry.

(*b*) *Simple Map-construction.*—Making of sketch-maps in the field using prismatic compass, clinometer, aneroid barometer, and plane table; contouring.

(*c*) *Elements of Map-projection.*—Properties and uses of the chief types of map-projections in common use, e.g. conical, zenithal, cylindrical, and world projections.

(*d*) *Practical Work.*—Field work; enlargement and reduction of maps; construction of scales and sections.

3. *Biogeography.*

(*a*) Geographical distribution of plants, animals, and man in broad outline.

(*b*) The influence of geographical environment on the life, arts, social organization, and migration of certain peoples.

(*c*) *The Influence of Man on his Environment.*—The factors governing the production and distribution of crops; the development and course of trade, its influence on transport, communication, and colonization; the origin and growth of towns.

Second Course.

1. *Physical Geography.*

(*a*) *The Atmosphere.*—Discussion of instruments and units used in meteorology; the operation of Ferrel's law; discussion and reduction of observations of different length and value and detection of periodicities; factors which determine climate; climatic zones and provinces; changes of climate in historic times; relations between climate on the distribution of plants and animals; preparation of climatological maps.

(*b*) *The Hydrosphere.*—Oceanography; methods of observations; tides, marine deposits and coral islands; distribution of life in the oceans; various régimes of rivers, lakes, reservoirs; underground water.

2. *Cartography.*

(*a*) *Map-analysis.*—Study of topographic, military, aeronautical and hydrographic maps of the various survey departments; the international map of the world; advanced interpretation of contour-maps.

(*b*) *Map-construction.*—Compilation of maps from route traverses and isolated farm surveys; trigonometrical and topographical surveying; discussion of instruments and methods.

(*c*) *Map-projection.*—Construction of grids, graticules, and projections of simple type.

(*d*) *Practical Work.*—Field work with plane-table and accessories; construction of block-diagrams.

3. *Biogeography.*

(*a*) The influence of geographical factors upon the distribution and development of plant and animal life.

(*b*) *Anthropogeography.*—Classification of races of mankind, and the physical characters on which it is based; the geographical distribution of races.

4. *Regional Geography.*—The world in outline; the physical regions of Europe; their coastal outline; relief, river systems, and climate; the influence of physical conditions upon the economic and political development of those regions.

Third Course.

1. *Physical Geography.*—Geomorphology; the influence of rock-texture, tectonic movements, and volcanic activity on relief; the evolution of fluvial, glacial, aeolian, and littoral topography; theories to account for the present distribution of land and sea; structure and development of the present land masses.

2. *Cartography.*—Principles of mapping from photographs obtained from the air, or by means of the stand camera; delimitation and demarcation of boundaries; field astronomy; gravity survey; discussion of the figure of the earth.

3. *Human Geography.*—The political partition economic and social development of the different reg of the world; the influence of physical features, clim factors, and economic resources on the settlement, deve ment, and lines of communication in these regi methods of political sub-division of countries; met whereby man's environment is rendered more benef to himself.

4. *Regional Geography.*—Africa treated similarl Europe (see Second Course, 4).

5. *History of Geography.*

Books recommended—

Course 1.

1. *P. Lake: *Physical Geography* (Cambrid *Chambers: *Pictorial Astronomy.* *V. & L. Snai *Open-air Geography and Topographical Model* (Blackie). A. L. du Toit: *Physical Geography for So African Schools* (Cambridge). A. Wilmore: *Groundw of Modern Geography* (Bell).

2. **Manual of Map-reading and Field-sketch* (H.M.S.O.). Bryant and Hughes: *Map-work* (Oxfo Garnett: *Little Book on Map-projection* (Philip).

3. *Hardy: *Plant Geography* (Clarendon). *N bigin: *Animal Geography* (Oxford). *Herbertson: *A and His Work* (Black). *Bartholomew: *Advanced A of Physical and Political Geography* (Oxford). Geor *Relations of History and Geography* (Oxford). Brow *Principles of Economic Geography* (Pitman).

Course II.

1. *Lempfert: *Meteorology* (Methuen). *Kendrew: *Climates of the Continents* (Cambridge). *Jenkins: *Oceanography* (Constable). R. de C. Ward: *Climate* (Macmillan). *Hints to Travellers*, Vol. II (Roy. Geog. Soc.).

2. *Hinks: *Maps and Survey* (2nd Ed.) (Cambridge). *Morrison: *Maps, Uses and Construction* (Stanford). *Hints to Travellers*, Vol. I (Roy. Geog. Soc.).

3. *Keane: *Man, Past and Present* (Cambridge). *Ripley: *Races of Europe* (London). *Stowe: *Native Races of South Africa*. Semple: *Influences of Geographic Environment* (Holt).

4. *McFarlane: *Economic Geography* (Pitman). *Lyde: *Continent of Europe* (Macmillan). Mill: *International Geography* (Macmillan).

Course III.

1. *Marr: *Scientific Study of Scenery* (Methuen). Davis: *Geographical Essays* (Ginn). Geikie: *Earth Sculpture* (Murray). Russel: *River Development* (Murray). Hobbs: *Characteristics of Existing Glaciers* (New York).

2. *Close: *Textbook of Topographical Survey* (H.M.S.O.). Macleod: *Mapping from Air Photographs* (H.M.S.O.).

3. *Brunhes: *Human Geography* (Rand McNally). Chisholm: *Handbook of Commercial Geography* (Longmans). Bowman: *The New World* (Harrap).

4. **Survey of the British Empire, Africa* (Oxford). *Yearbook of the Union of South Africa*, No. 5 (Govt. Printer). Knox: *Climate of Africa* (Cambridge).

5. *Tozer: *History of Ancient Geography* (Cambridge). *Beazley: *Dawn of Modern Geography* (3 vols.) (London). Heawood: *Geographical Discovery in the XVIIth and XVIIIth Centuries* (Cambridge).

N.B.—Those marked * are essential to a complete study of the syllabus.

ECONOMIC GEOGRAPHY.

1. General relations between Physical and Economic Geography.

(*a*) The inter-relations of location, altitude, and relief; the nature and distribution of soils and minerals; proximity to bodies of water; and climate.

(*b*) Their combined influence on the distribution and growth of vegetation and of animal life; and on the occupations, health, and efficiency of man.

2. The Geography of Industries.

(*a*) Cereals, fruits, vegetables, wine, sug beverages.

(*b*) Forestry.

(*c*) The animal industries, fisheries, whaling.

(*d*) Fur, feathers, hides, and ivory.

(*e*) Fibres, textiles, and clothing.

(*f*) Mineral exploitation, stone, pottery, gla diamonds, gold, silver, copper, tin, aluminiu iron.

(*g*) Sources of power, fuels, running water.

3. Commercial Geography.

(*a*) The origin and growth of commercial centr

(*b*) The origin and development of trade routes

(*c*) The development of the natural resources new regions, and of new sources of trade.

N.B.—Stress will be laid on the Economic Geograp of South Africa throughout the course.

Books recommended :—

*Chisholm: *Handbook of Commercial Geography* (Longmans). *Lake: *Physical Geography* (Cambridge). *Bartholomew and Lyde: *Atlas of Economic Geography* (Oxford). **Yearbook of Union of South Africa*, No. 5, (Government Printer). *Industrial and Commercial Geography* (Holt). McFarlane: *Economic Geography* (Pitman).

N.B.—Those marked * are essential to a complete study of the syllabus.

M.A. SYLLABUSES.

GEOGRAPHY.

The examination comprises—

(*a*) A dissertation on a region or subject to be selected by the candidate and approved by the Committee of Studies.

(*b*) Two papers on General Geography.

(*c*) Three papers on two of the following special subjects, chosen by the candidate for intensive study and approved by the Committee of Studies:—

Geomorphology.
Oceanography.
Meteorology and Climatology.
Human Geography.
Geography of Plants and Animals.
Political and Historical Geography.
Economic and Commercial Geography.
Cartography.
Some special aspect of the Study of Africa.

One of the above-mentioned papers may be of a practical nature.

Department of Geography.

Lecturer: J. Hutcheon, M.A., F.R.S.G.S.

The following courses are offered:—

1. Geography as a subsidiary subject. (One year course.)
2. Commercial Geography. (One year course.)
3. Geography as a major subject in (*a*) Arts; (*b*) Science. (Two years course.)
4. Course for Technological Students.
5. Special courses for Teachers—syllabuses 1, 2 and 3, together with courses in Geographical Methodology.
6. Ethnology.

SYLLABUSES

1. Geography as a Subsidiary Subject. (One year course.)

A knowledge of the chief generalisations regarding the surface forms of the land, the movements of air and water, and the distribution of plants, animals, and man. General commercial and industrial geography. The world's peoples. The geographical factors in human activities. The cartographical representation of geographical data. The evolution of the map of the world. The geography of Africa.

2. Commercial Geography.

Short course of general geography introductory to the study of commercial geography.

The production, distribution, and exchange of the more important commodities.

The rise, development, and distribution of important industries.

The commercial geography of Southern Africa.

Books recommended: Chisholme, *Handbook of Commercial Geography* (Longmans); Bartholemew and Leyd's, *Atlas of Economic Geography* (Oxford University Press).

3 (*a*). Geography as a Major Subject in Arts.

(*a*) General Geography (one and a half courses).
The earth as a planet.
The geological basis of geography.
Climate.
Elements of plant and animal geography.
Natural regions.
The world's peoples.
The geographical factors in human activities.
General commercial and industrial geography.
The principles of map-construction and interpretation.
The evolution of the map of the world.
The geography of Africa.

(*b*) More detailed study of *two* of the following (half-courses):—

(i.) Historical geography and History of Discovery.
A general knowledge of the influence of geographical conditions on history.
The historical geography of a selected region.
The history of geographical discovery (in outline).
The history of geographical ideas and methods.

(ii.) Anthropogeography.
The classification and geographical distribution of the races of mankind.
The influence of geographical environment on man and his activities.
Special study of a selected region.

(iii.) Economic Geography.
The production, distribution and exchange of the more important commodities.
The more important industries.
The economic geography of a selected region.

(iv.) Physical Geography.

Geomorphology. Oceanography. Meteorology and Climatology.
Special study of a selected region.

(v.) The geography of a selected region, *e.g.*, North America.

3 (b). Geography as a Major Subject in Science.

(*a*) General Geography (one and a half courses—as for Arts).

(*b*) More detailed study of *three* of the following (half courses):—

(i.) Physical geography (as for Arts).

(ii.) Anthropogeography (as for Arts).

(iii.) Biogeography.

The vegetation regions of the world.
Floral and faunal regions.
Plants and animals of economic importance.
Special study of a selected region.

(iv.) Cartography.

Map construction. Elementary methods and instruments of surveying. The more useful projections considered with reference to their advantages for different geographical purposes and their unavoidable defects. The interpretation and correlation of maps. The making of statistical and other geographical maps and meteorological charts.

(v.) The geography of a selected region, *e.g.*, North America.

4. Course of Geography for Technological Students.

Short introductory course of general geography.
Short course of industrial geography.
The bases of manufacture.
Some important industries.
The main features of the industrial geography of a selected region.

B.A. Economic Geography (One Year) and B. Com. I. Economic Geography.

Outline of general geography introductory to economic geography.

Geographical conditions of the production, distribution, and exchange of important commodities.

Geographical conditions of the rise, development, and distribution of important industries.

Economic geography of South Africa.

Books recommended:—

Elementary: Chapman, S. J., *Political Economy* (Home University Library Series) (Williams and Norgate); Ely, R. T., and Wicker, G. R., *Elementary Principles of Economics* (revised and adapted for English students by L. L. Price) (Macmillan); Clay, H., *Economics; an introduction for the general reader* (Macmillan); Cannan, E., *Wealth* (King).

General Treatises: Marshall, A., *Principles of Economics* (Macmillan); Taussig, F. W., *Principles of Economics* (2 vols.) (Macmillan).

Special: Bastable, C. F., *Theory of International Trade* (Macmillan); Layton, W. T., *Introduction to the Study of Prices* (Macmillan); Williams, S. C., *Economics of Railway Transport* (Macmillan).

History: Meredith, H. O., *Outlines of Economic History of England* (Pitman); Cunningham and McArthur, *Outlines of English Industrial History* (Cambridge University Press).

GEOGRAPHY.

In and after 1916 Geography will be a subject at the B.A. Pass Examination in Groups B, C, and D.

In Group B as an additional subject,
in Group C as an alternative to Geology,
in Group D as an additional subject

provided that no candidate shall be allowed to take Geography unless he has passed in Geology at the Intermediate Examination at least one year before his B.A. Examination.

The subject is divided into two heads.

a. Astronomic basis of Geography, Meteorology, Climatology and Physiography.

b. Biogeography, Anthropogeography and Ethnology, Social and Economic conditions and their dependence upon physiographic environment, History of Geographical Discovery.

The practical examination will consist of tests in the construction of maps and the elements of surveying.

GEOGRAPHY.

The subject is taken by the departments of Geology, Physics and History. The Intermediate stage is the same as that for Geology. The B.A. Course is spread over two years and deals with the modern aspects of Geography, including the causes which produce the various surface features of the earth, animal and plant distribution, astronomical factors and so forth. A large part of the course consists of a special study of the continent of Africa. Practical work consists of map drawing and the reading of meteorological instruments.

UNIVERSITY COURSES
AT THE
RHODES UNIVERSITY COLLEGE

The Courses prescribed by the University of South Africa will be followed, and will include First Year, Second Year, and Third Year Courses for the Degree of Bachelor in Arts, or in Science, and the Fourth or Fifth Year Course for the Master's Degree in Arts or in Science.

There will also be Courses in Land-Surveying, First Year Mining Engineering (including Civil, Electrical and Mechanical Engineering), First Year Medical Course, First B.Sc. in Agriculture, and the full Courses in Law and in T1 and T2.

The Subjects which may be taken at the College include :—

Latin.	Geography.
Greek.	Pure Mathematics.
English.	Applied Mathematics.
French.	Physics.
Dutch.	Botany.
German.	Zoology.
History.	Geology.
Philosophy.	Chemistry.
Economics.	Anatomy.
Law.	Education.
Graphics.	

GEOGRAPHY.

Prof. E. H. L. Schwarz.

Geography may be taken as a special one year's Course or as a three years' Major Course.

The Regulations for the B.A. and B.Sc. degree in Geography are the same. Ancillary subjects, at least one qualifying Course in History, Mathematics, Physics, Botany and Zoology.

Syllabuses.

Geography as a one year's Course:

A self-contained general Course dealing with the earth as a planet, latitude and longitude. Map construction. Weather and climate. Hydrography. The World's peoples. Distribution of animals and plants. The Geography of Africa.

Geography as a Major Subject:

I. The first year's Course is the same as that in Geology.

II. The same as the special one year's Course.

III. The History of Discovery, Cartography. The Physical Geography and Ethnography of Africa.

Text-books: Unstead and Taylor, General and Physical Geography (Philip). Schwarz, South African Geography (Blackie). Keane, Ethnology (Cambridge Press). Jacobs, History of Discovery (Hodder & Stoughton). Adams, Map Projections (Philip).

Atlas: Either Atlas of Economic Geography or Oxford Atlas, Physical and Political (Oxford Press), or Advanced Atlas for S.A. Schools (T. Nelson).

Practical work consists of map drawing and projections, plane table surveying and the use of the sextant, prismatic compass, levels, etc. Students will have the opportunity of using the large equatorial telescope for elementary astronomical work.

GEOGRAPHY.

Lecturer to be appointed.

Geography may be taken as a one or two-year su diary subject, or as a Major for B.A. or B.Sc.

A one-year Course in Economic Geography may also taken.

1. Geography as a Subsidiary Subject (One-Y Course).

A knowledge of the chief generalisations regar the surface forms of land, the movement of air and w and the distribution of plants, animals and man. Gen commercial and industrial geography. The world's peo The geographical factors in human activities. The ca graphical representation of geographical data. The ev tion of the map of the world. The geography of Afric

2. Commercial Geography. (One-Year Course.)

Short Course of general geography introductory to study of commercial geography.

The production, distribution, and exchange of more important industries.

The commercial geography of Southern Africa.

Books recommended:

Chisholm: Handbook of Commercial Geogra (Longmans).

Bartholomeuw and Lyde's Atlas of Economic Geogra (Oxford University Press).

3 (a). Geography as a Major Subject in Arts. (Th Years' Course.)

(a) General Geography:
The earth as a planet.
The geological basis of geography.
Climate.
Elements of plant and animal geography.
Natural regions.
The world's peoples.
The geographical factors in human activities.
General commercial and industrial activities.
The principles of map-construction and interpretation.
The evolution of the map of the world.
The geography of Africa.

(b) More detailed study of two of the following:—

(i) Historical Geography and History of Discovery:
A general knowledge of the influence of geographical conditions on history.
The historical geography of a selected region.
The history of geographical discovery (in outline).
The history of geographical ideas and methods.

(ii) Anthropogeography:
The classification and geographical distribution of the races of mankind.
The influence of geographical environment on man and his activities.
Special study of a selected region.

(iii) Commercial Geography:
The production, distribution and exchange of the more important commodities.
The more important industries.
The commercial geography of a selected region.

(iv) Physical Geography:
Geomorphology. Oceanography. Meteorology and Climatology.
Special study of a selected region.

(v) The Geography of a Selected Region, e.g., North America.

3 (b). Geography as a Major Subject in Science. (Three Years' Course.)

(a) General Geography (as for Arts).
(b) More detailed study of three of the following:—
(i) Physical Geography (as for Arts).
(ii) Anthropogeography (as for Arts).
(iii) Biogeography:
The vegetation regions of the world.
Floral and faunal regions.
Plants and animals of economic importance.
Special study of a selected region.
(iv) Cartography:
Map construction. Elementary methods and struments of surveying. The more useful p jections considered with reference to their vantages for different geographical purpo and their unavoidable defects. The interpret tion and correlation of maps. The making statistical and other geographical maps a meteorological charts.
(v) The Geography of a Selected Region, e.g., Nor America.

GEOGRAPHY.

Mr. SAYCE.

Geography may be taken as a one or two-year subsidiary subject, or as a Major for B.A. or B.Sc.

A one-year Course in Economic Geography may also be taken.

1. **Geography as a Subsidiary Subject:** One-year Course..

A knowledge of the chief generalisations regarding the surface forms of land, the movement of air and water and the distribution of plants, animals and man. General commercial and industrial geography. The world's peoples. The geographical factors in human activities. The cartographical representation of geographical data. The evolution of the map of the world. The geography of Africa.

Books recommended:
Finstead & Taylor's "General and Regional Geogr (Geo. Philip & Son).
A Class Book of Physical Geography by Simmc Stenhouse (Macmillan & Co.)
Union of South Africa Year Book.
A good Atlas.

2. **Economic Geography:** One-year Course.

Short course of general geography introductor to the stu Commercial Geography.

The production, distribution and exchange of the more imp commodities.

The rise, development and distribution of important indust The Economic Geography of Southern Africa.

In connection with the above, the study of Blue Book various Reports e.g. Bank, Mining, Chamber of Mines, and S.A. way Reports, will form an integral part of this course.

Books recommended as Text books:
Principles of Economic Geography by R. N. Brow Isaac Pitman & Sons.)
Commodities of Commmerce by J. Slater (Pitman'
Union Year Book of Statistics (Govt. Stationery Pretoria).
A good Atlas.

N.B. Students cannot take as Qualifying Courses both the O: General Course and the Course in Economic Geography.

3. **Geography as a Major Subject (B.A. or B.Sc.)**

First Year Course:
(i) Principles of map construction.
(ii) Evolution of the map of the world in outline.
(iii) The Earth as a planet.
(iv) Climate and natural regions.
(v) Life of Man in the natural regions.
(vi) Geological basis of geography in outline.

Except where otherwise arranged, students in the foregoing will attend the One-year course in General Geography.

Second and Third Year Courses:

Sections (i) to (vi) of the first year's course, if not already together with four out of the following eight options.

(i) Bio-geography (a) p'ants (b) animals.
(ii) Geography of Man (a) Ethnological (b) Social and Polit
(iii) Cartography.
(iv) History of Geography, including the Geography c ploration.
(v) Geography of a selected Region in detail.
(vi) Economic Geography.
(vii) Geography of Africa.
(viii) Physical Geography (comprising geomorphology, oceanog meteorology and climatology).

The work in 1922-23, unless otherwise arranged, will cover sections (viii) and (vi), section (ii) or (vii) and section (iv).

Examination: Three written papers and one practical, the latter dealing with map work, cartographical data based on sections (vi) and (viii) and the recognition of hand specimens of S. African rocks and flora.

Books recommended:

Salisbury's Physiography (John Murray, London).
Chisholm's Handbook of Commercial Geography (Longmans).
John Keane's The Evolution of Geography (E. Stanford, London).
Heawood's Geographical Discovery in 17th and 18th centuries, (Cambridge Univ. Press.)
Fairgrieve's Geography and World Power (Univ. of London Press, Warwick Square, E.C.).

MASTER'S DEGREE.

Candidates must have taken Geography as a Major Subject in the Bachelor's Degree.

Examination: Three written papers and a thesis comprising:

(a) a general paper;
(b) two papers in special subjects selected by the candidate and approved by the committee of studies;
(c) a thesis to be presented on some region and showing evidence of the candidate's personal work and observation.

AARDRIJKSKUNDE.

De h.h. VON BONDE en FRANCKEN.

De aardrijkskunde wordt onderwezen in aansluiting met de afdelingen: geologie, natuurkunde en toegepaste wiskunde. Voorlopig is een eerstejaarskursus ingesteld vooral met het oog op aanstaande onderwijzers. Indien het nodig mocht zijn ook voor het tweede en derde jaar voorziening te maken, dan zou vooreerst het vastgestelde program voor eksterne studenten in gebruik genomen kunnen worden.

EERSTEJAARSKURSUS.

A. THEORETIES GEDEELTE.

(a) De vormen der aardkorst—tektoniese aardkunde. Bewegingen van lucht en water. Hoofdzaken der klimatologie. Verspreiding van planten en dieren.
(b) De volken der aarde. Beginselen der ethnologie. Evolutie van onze voorstellingen omtrent de aarde—reizen en ontdekkingen—ontwikkeling der geografiese wetenschap.
(c) Beschrijvende aardrijkskunde: het werelddeel Afrika en in 't biezonder Zuid-Afrika.

Voorgeschreven: *A South-African Geography by E. H. L. Schwarz.* De student dient zich hierbij een goede atlas aan te schaffen (speciaal voor Z.-Afrika bewerkt).

B. PRAKTIES GEDEELTE.

(a) Praktiese oefeningen in het veld. Gebruik van planchet, prismaties kompas, nivelleerwerktuig.
(b) Bepaling van meridiaan, lokale tyd, geografiese breedte en lengte.
(c) Geologie in het veld—uitstapjes.
(d) Natuurkundige aardrijkskunde—bepaling van temperatuur, luchtdruk, vochtigheid, regen, bewolking, richting en kracht van de wind.
(e) Kartografie en interpretatie van kaarten.

APPENDIX 5.G

AARDRYKSKUNDE.

Mnr. J. S. van der Merwe.

Kursus I.

1. Natuurkundige Aardrykskunde:
   (a) Die aarde as Planeet.
   (b) Die Atmosfeer.
   (c) Die Oseane.
   (d) Die Litosfeer.
2. Kartografie:
   (a) Beginsels van Kaartontleding.
   (b) Eenvoudige Landmeting.
   (c) Beginsels van die Kaartprojeksieleer.
3. Biogeografie:
   (a) Geografiese verspreiding van plant- en diersoorte en van die mens.
   (b) Sosiale Aardrykskunde.
   (c) Ekonomiese en Handelsaardrykskunde.
4. Oorsig van die Aardrykskunde van Afrika, met besondere verwysing na Suid-Afrika.

Praktiese Werk:-

Verhoudings van Aarde, Son en Maan.
Atmosfeer.
Oseane.
Litosfeer.
Kartografie.

(Vir volledige opgawe sien Jaarboek, Univ. van Suid-Afrika).

AARDRYKSKUNDE.

Mnr. J. S. van der Merwe.
Mnr. G. Vssel.

Kursus I.

1. Natuurkundige Aardrykskunde:
   (a) Die aarde as Planeet.
   (b) Die Atmosfeer.
   (c) Die Oseane.
   (d) Die Litosfeer.
2. Kartografie:
   (a) Beginsels van Kaartontleding.
   (b) Eenvoudige Landmeting.
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4. Oorsig van die Aardrykskunde van Afrika, met besondere verwysing na Suid-Afrika.

Praktiese Werk:-

Verhoudings van Aarde, Son en Maan.

Litosfeer.

Kartografie.

(Vir vollediger opgawe sien Jaarboek, Univ. van Suid-Afrika).

Kursus II:

1. Natuurkundige Aardrykskunde.

   (a) Die Atmosfeer: Bespreking van die instrumente gebruik by die meteorologie; die wette en algemene sirkulasie van die atmosfees; klimaatsones en gebiede; veranderings van klimaat binne historiese tyd, Die Klimaat van die Moessonlande van Asië.

   (b) Die Oseaan: Maniere van waarneming, getye; die oorsake en aard van seestroming; see-afsettinge; kenmerke van die vernaamste seë; temperatuur en soutgehalte.

2. Kartografie.

   (a) Kaartverklaring:- 'n Studie van kaarte van verskillende opmetingsdepartemente; die internasionale kaart van die wêreld; die basis van 'n noukeurige kaart.

   (b) Kaartprojeksie:

   Beginsel svan tekening van graadvelde en natekennette.

   (c) Kaarttekening:

   Beginsels van koersopmeting en triangulasie; bespreking van gebruikte instrumente en metodes

3. Biogeografie.

   (a) Plante-Aardrykskunde: Klassifikasie van Plante; Vernaamste soorte van plante; Plante reaksie tot die omgewing; indeling van gronde, Hoofplantgemeenskappe.

   (b) Diere-Aardrykskunde:

   Klassifikasie van diere, die landbrugteorie en sy verhouding tot die verspreiding van diere; verdeling van die aarde in soö-geografiese gordels.

   (c) Antropogeografie:-

   Klassifikasie van menserasse en die liggaamlike kenmerke waarop dit berus; aardrykskundige verspreiding van rasse.

4. Aardrykskunde volgens Streekindeling.

   (a) Die Natuurstreke van Europa: Hulle kuslyn; natuurkundige gesteldheid, rivierstelsels en klimaat; die invloed van natuurkundige toestande op die ekonomiese en politieke ontwikkeling van hierdie streke. uitvoerige regionaalstudie van Frankryk.

   (b) Die orige wêrelddele op dieselfde manier in hooftrekke behandel.

Praktikum: Gedurende die jaar word praktiese werk in verband met die verskillende afdelinge gedoen.

Kursus III:

1. Natuurkundige Aardrykskunde.

   Geomorfologie.

   Die invloed van die samestelling van gesteentes, bewegings van die aardkors en vulkaniese werking op die aardbodem; ewolusie, rivier-, ys-, wind- en kustopografie. Teorieë ter verklaring van die teenswoordige verspreiding van land en water; bou en ontwikkeling van die teenswoordige landmassas.

2. Kartografie.

   Bepaling en afbakening van grense; vertolking van hoogte-lynkaarte.

   Ontwikkeling van die aarde, bespreking van die gedaante van die aarde; swaartekrag waarnemings; die isostatiese teorie.

3. Antropogeografie.

   (a) Sosiale Aardrykskunde:- Die belangrikheid van ras en omgewing by die bepaling van die gewoontes en organisasie van volke; die filosofie van determinisme; die uitwerking van die mens op sy omgewing; die inhoud en metode van geskiedkundige aardrykskunde.

   (b) Staatkundige Aardrykskunde.

   (c) Die ekonomiese en handels-aardrykskunde van Afrika, Suid van die Sambesie.

4. Regionale Studie van Afrika.

5. Die Evolusie van Aardrykskundige begrippe.

6. *Practicum*:-

   (a) Vertolking van hoogtekaarte.

   (b) Berekening van die gemiddelde hoogtes van natuurstreke.

   (c) Planimetrie.

   (d) Konstruksie van isometriese-tekeninge en blokfigure

   (e) Vervaardiging van topografiese modelle.

   (f) Noukeurige studie in die omgewing van Potchefstroom van verskillende topografiese vorme.

   (g) Meergevorderde vertolking van kaarte wat die feite van die aardrykskunde in verband met die mens ophelder.

M.A.

Die eksamen bestaan uit:-

(a) 'n Verhandeling oor 'n gebied of onderwerp gekies deur die kandidaat en goedgekeur deur die Studiekomitee.

(b) Twee vraestelle oor Algemene Aardrykskunde.

(c) Vier vraestelle oor Geomorfologie vir besondere studie.

and Tilbury. Specimens of the bronze age, including a bayonet-shaped blade, have been dug up at Grays, so has an iron celt with a rounded socket, but without a loop.

Thent here are the Deneholes in Hangman's Wood, near Orsett. The date when these were dug is not known, and the purpose for which they were made is not proven.

Deneholes.

In a copse of a few acres there are about three score of them, most of which have been artificially filled in; on the edge of the wood there are a few, however, that are clear. The Essex Field Club has investigated these, and an account of their researches can be found in the *Essex Naturalist I* (1887), p. 225-76.

Deneholes, or Daneholes, are underground chambers, usually excavated in chalk. There is a narrow shaft about three feet in diameter and about 100 feet deep, which leads to one chamber or several. The shafts in this part of Essex pierce through 60 feet to 70 feet of Thanet sands before the chalk is reached. The chambers are about fifteen yards in diameter and from sixteen feet to eighteen feet high. They do not intersect, and are thin-walled.

Occupations.

From very early times the obtaining of flint was carried on in the neighbourhood of Purfleet and Grays, and the manufacture of gun flints was carried on at Purfleet up to 1845 (P.O. Direction, 1845, p. 106). It probably died out soon after then, as tinder boxes and flint-lock guns ceased about that time.

Another important industry was the obtaining of chalk for marking purposes. Arthur Young, writing in 1768, commented on the badness of the roads, and the continual meeting of chalk wagons between Billericay and Tilbury (*Six Weeks' Tour through the Southern Counties*).

Chalk was burnt for lime in quite early times in this district. In 1669 Samuel Irons, a lime burner, of Purfleet, issued a halfpenny token on which a lime kiln was represented (*Victoria County History of Essex II*, 45).

In 1681, Smith, a lime burner, was buried at Stifford, while in 1826 the greater part of the population worked in the kilns.

The use of the chalk for marling was discontinued: a little lime-burning is carried on, but now a large and increasing quantity is utilised for the manufacture of Portland cement.

Portland cement was invented in 1824. It consists of chalk and clay, which are carefully mixed, dried, burned almost to a cinder, and then ground into a fine powder. It is cheaper than Roman cement, and is superior to it, as it does not deteriorate, and besides it sets slowly. Its manufacture first started on the banks of the Medway and on the Kentish shore of the Thames. In fact, 80 per cent. of the Portland cement manufactured in the country is made in the Thames area. Here there are chalk and clay in great quantities, the district is close to the metropolis, and there is excellent water facilities for carring the product to London and elsewhere.

This industry was introduced to the north bank of the Thames by Mr. E. W. Brooks, of Grays, in 1870. He had been on a visit to Northfleet, and was convinced that what was being done on the south bank could be done in Essex. Brooks rented a disused chemical works, and

thus founded an industry which now employs the greater proportion the male population in the towns of Purfleet and Grays.

In the latter town, it is true, there are a number of men who tra backwards and forwards to Tilbury every day to their work in the do or on the river.

GEOGRAPHY IN BRITISH UNIVERSITIES

THE following account of the present position of and courses geography in the Universities of Britain should be compared w the previous ones which have been published (see *Geographical Teach* February, 1903, Vol. II, p. 33, Summer number, 1906, Vol. III, p. 2 Summer number, 1908, Vol. IV, p. 241, and Spring number, 1910, V V, p. 228). There has been steady progress in the past twelve years, a we hope that in the near future those Universities and University Colleg which have not yet instituted lectureships will do so.

The Editor desires to thank all his colleagues and the oth University officials who were good enough to supply the information this article.

The heads under which the facts are arranged are as follows:—

(1) Is there a specially staffed and equipped geographical department?
(2) Names of the officially recognised teachers of Geography.
(3) General plan of courses for the academic year.
(4) The nature of the practical work.
(5) For what University Examination is Geography (a) a compulsory, (b) an optio subject?
(6) What is the syllabus in Geography for each examination?
(7) What is the approximate cost in fees of a year's training in Geography?
(8) Any additional information.

ENGLAND.

UNIVERSITY OF OXFORD.

SCHOOL OF GEOGRAPHY.

Reader since 1887, Department since 1899.

Professor of Geography and Director of the School, A. J. Herbertson, M.A., Ph. Lecturer in Ancient Geography, G. B. Grundy, M.A., D.Litt. Instructor in Surveyin N. F. MacKenzie, Hon. M.A., M.Inst.C.E. Assistant to the Professor, H. O. Beckit, M Demonstrator in Geography, N. E. MacMunn, Modern History Honours School, Oxfor Junior Demonstrator in Geography and Librarian, O. G. S. Crawford, B.A.

The instruction consists of lectures, tutorial, seminar, and practical work in the laborato and in the field. The lectures and practical classes are held in the Old Ashmolean Buildin The Professor in Geography, the Assistant to the Professor, and the Demonstrators give t following courses:—1. *Principles of Geography.* 2. A survey of the chief natural regions the World. 3. A more detailed examination of selected regions: in 1911-12, the *British Isle Canada, Italy and the Western Alps.* 4. A study of typical *Land-Forms* and the *Morpholo of the Continents.* 5. A course on *Meteorology, Climatology* and *Oceanography.* 6. A cour on *Human Geography*—(i) *Distribution of Man*, in the Michaelmas Term; (ii) *Principles Economic Geography*, in the Hilary Term; (iii) *Principles of Social and Political Geograph* in the Easter Term. 7. *Geographical Methods and Notations*, with practical work in ma making and map reading. 8. A course on the *Topography of Europe*, and on *Historic Geography*, for students of history. Students are recommended to attend the lectures Professor Sollas, in the Geological Department, and other courses bearing on geography

The Instructor in Surveying conducts (1) a one-term course in the *Principles of Map-making*, with field work, for students of Regional Geography; and (2) special courses on *Surveying*, for those who select this subject for the Diploma, or for a special Certificate, and for those preparing for Egyptian or other administrative appointments or for exploration. For special students of surveying there is a four or five weeks' field course in July. The Lecturer in Ancient Geography gives a course of lectures on some branch of classical geography. He also reads with students who select Ancient Geography as a special subject for the Diploma.

There are seminars for the study of recent geographical literature. Field excursions are held regularly. Informal instruction is given to each student. Special tutorial instruction is also given to undergraduates taking geography as one of the subjects for the Final Pass B.A. Examination, and to candidates for the I.C.S. examination. All diploma students are required to, write a description of a selected district based on personal observations drawings, measurements, &c.

The School is open daily, when the Library and Map Collection may be consulted by members of the University and accredited readers. There are about 10,000 sheets of maps, 420 wall maps and diagrams, 2,500 lantern slides, and 3,500 books, atlases, and pamphlets.

The Diploma in Geography is given to candidates, whether members of the University or not, to women as well as to men, who fulfil the following conditions:—(1) They must satisfy the Committee for the Supervision of Instruction in Geography that they have received a good general education. (2) They must obtain a Certificate, signed by the Reader in Geography, that they have attended a prescribed course of lectures and study at the School of Geography. (3) They must satisfy the Examiners appointed by the University in Part I, *General and Regional Geography*, and in three subjects of Part II, of which *Geographical Description of a Selected District* is compulsory. The other subjects, of which two must be chosen, are *Special Regional Geography*, *Climatology and Oceanography*, *Geomorphology*, *Biological Geography*, *Economic and Political Geography*, *Ancient Historical Geography*, *Modern Historical Geography*, *The History of Geography (including the History of Exploration)*, *Surveying*. The Diploma with distinction is awarded for merit in two subjects, or exceptional merit in one, provided that competent knowledge has been shown in the other subjects selected. The Diploma Course is so planned that a student can take it either in one academical year, or if he prefers, in two or more years. Certificates are also given to candidates who have fulfilled the conditions (1) and (2) above, and (3) have satisfied the Examiners in (*a*) General and Regional Geography, or (*b*) Regional and Physical Geography, or (*c*) Regional and Historical Geography, or (*d*) Surveying.

Research Degrees (B.Sc. and B.Litt.) may be obtained by students submitting a geographical thesis. Such students must spend at least two academic years at Oxford. The Diploma in Geography may now, under certain conditions, be registered as the equivalent of two of the Groups of Subjects in the Final Pass examination for the degree of B.A., any of the Certificates may be registered as one group. Some knowledge of geography is required from candidates for the Final Honours Schools of Modern History, and for the Diplomas in Anthropology and Economics. Economic Geography may be selected as a special subject for the Diploma in Economics.

PART I.—*General and Regional Geography*. Two written papers and one practical paper. The cartographical analysis of the physical regions of the World. An elementary knowledge of the chief generalizations regarding the surface-forms of the land, the movements of air and water, and the distribution of plant-associations, animals, and man. The chief facts of modern economic and political geography considered in relation to the influence of physical and biological conditions. A more detailed knowledge of the British Isles and British Lands beyond the Seas. In connection with this subject, candidates will require to be familiar with the principles of field map-making, by plane-table, prismatic compass, clinometer and aneroid, the representation of relief, the preparation of distributional and statistical maps, the orientation, reading and measurement of maps.

PART II.—Subject 1 below and any two of the other nine subjects, in each of which there will be two papers, one of which may be wholly or partly practical. There will also be a *viva voce* examination. 1. *Geographical Account of a Selected District*. Detailed geographical account of a selected district, based on personal observations and on a study of maps, statistical returns, and books. 2. *Special Regional Geography*. A very thorough knowledge of selected regions. In 1912 Canada and Italy and the Rhone Basin. (Candidates will be required to read French or German or Italian.) 3. *Climatology and Oceanography*. The distribution of solar energy on the rotating Earth and the resulting circulations of air and water. The climatic provinces of the Earth. Methods of meteorological investigation. Oceanic conditions and the methods of observing and representing them. In connection with this subject, candidates may be required to reduce, tabulate, and plot observations of atmospheric pressure, winds, temperature, and rainfall; or of oceanic depths, temperature, density, and salinity. 4. *Geomorphology*. The characteristics, history, and distribution of typical land forms, especially of mountain systems, river courses and river basins, and coastal belts. The configuration of the continents and of the bed of the ocean. In 1912 a more detailed knowledge of the morphology of Europe. 5. *Biological Geography*. The character and distribution of the chief plant formations and associations and their animal life. Centres of origin and means of dispersal of plants and animals. Floral and faunal regions and their

history. Origin and distribution of plants and animals of economic importance. Spec biological geography of one continent. In 1912 *Africa*. 6. *Economic and Political Geograph* The geographical distribution of Man according to race, language, and economic, social, a political conditions. The geographical economic and strategic conditions of social and politic organization in the various regions of the World, especially those of economic and historic importance. The main lines of communication, commerce, and migration. Special attentio should be given in 1912 to either (*a*) the geographical factor in colonization, or (*b*) the intern conditions and the external relations (economic, strategic, and political) of a selected regio In 1912 Central and Western Europe and the United States of America. 7. *Ancient Historic Geography*. A general knowledge of the historical geography (economic, strategic a political) of the Roman World, considered in relation to the influence of physical feature A more detailed knowledge of the historical geography of Greece and Italy. 8. *Mode Historical Geography*. A general knowledge of mediaeval and modern historical geograp (economic, strategic and political), considered in relation to the influence of physical feature A more detailed knowledge of the historical geography of Western and Central Europe a of North America. 9. *The History of Geography, including the History of Discovery*. Th history of geographical ideas and methods. The outlines of the history of discover In 1912 a more detailed knowledge of the history of physical geography, and of the explor tion and mapping of Africa. 10. *Surveying*. (1) Field sketching and reconnaissance; (Geographical and exploratory surveying; (3) Topographical surveying; (4) Principles Geodetic surveying; and any one of the following: (5) Engineering surveying, (6) Cadastr surveying, (7) Hydrographical surveying, (8) Magnetic surveying, and (9) Advanced Geodes Under (1) will be included—Scales: Copying, reducing and enlarging maps. Convention signs. Representation of hill features. Under (2) and (3)—Base-lines. Triangulatio Traverses. Tacheometry and subtense methods. Levelling, determination of altitude and contouring. Map projections and graticules. Latitude, longitude, and azimuth. Und (4) a general knowledge of the shape and dimensions of the Earth, and of allied problem such as local attraction. Candidates will be required to be familiar with the use of th theodolite, sextant, plane-table, prismatic compass, clinometer, level, aneroid and mercuri barometer, boiling point thermometer, and planimeter. They may be required (*a*) to measur a base-line, to plan and execute a triangulation over a prescribed area, and to determin the position of a given point, (*b*) to draw the network of a map to satisfy given requirement (*c*) to execute a map of a limited area.

Any work previously executed in any of these subjects by the candidate himself ma be submitted and will be taken into account.

Ordinary lectures are open free to all members of the University; others pay 10/- a ter for each course. For tutorial and practical work the fees are £2 a term for each course Inclusive fees: Diploma, £15 for members of the University, £18 for others, plus £2 10 examination fee. Certificate, £7/10/- for members of the University, £9 for others, plu £1 examination fee. £5 more is charged for the special field course for Surveyors.

[N.B.—There is a Scholarship worth £60 a year, but this is open only to members the University of Oxford.]

Summer Vacation Courses in Geography are held regularly in alternate years. Th next will be in August, 1912.

UNIVERSITY OF CAMBRIDGE.

DEPARTMENT OF GEOGRAPHY.

Lecturer 1888, Reader 1898, Board of Studies 1903. (Secretary, Professor J. Stanle Gardiner, Gonville and Caius College).

A. R. Hinks, M.A., R.G.S. Lecturer in Surveying and Cartography; P. Lak M.A., R.G.S. Lecturer in Regional and Physical Geography; H. Y. Oldham, M.A., Univer sity Lecturer in Historical and Economic Geography. Dr. A. C. Haddon, F.R.S., Reader i Ethnology, Dr. J. E. Marr, F.R.S., Lecturer in Geology, and Professor J. Stanley Gardiner Professor of Zoology, also deliver courses of lectures in geographical subjects.

The Board has arranged for the following Courses, which are open to all students, whether members of the University or not:—

Special Examination for the Ordinary Degree, and Examination for Diploma, Part I.—1. (Mr. Lake.) *Physical Geography*. Three terms. With practical work. Fee, £1 1/- per term. 2**. (Mr. H. Yule Oldham.) *Political and Economic Geography*. Three terms. Fee £1/1/- per term. 3. (Mr. H. Yule Oldham.) *History of Geographical Discovery*. Michael mas and Lent Term. Fee, £1/1/- per term. 4. (Mr. A. R. Hinks.) *Cartography an Geographical Surveying* (with field work). Michaelmas and Lent Terms. Fee, £1/1/ per term. 5**. (Mr. A. R. Hinks.) *Map Projections and Exploratory Surveying*. Easte Term. Fee, £1/1/-. 6. (Dr. A. C. Haddon, F.R.S.) *Ethnology*. (*The Races of Mankin and their Distribution.*) Michaelmas and Lent Terms. Fee, £1/1/- per term.

Examination for Diploma, Part II.—(*a*)** (Mr. Lake.) *Regional Geography*. Michael mas and Lent Terms. Fee, £1/1/- per term. (*b* i) (Mr. A. R. Hinks.) *Cartography an*

Geographical Surveying (with field work). Lent Term and Easter Term if necessary. Fee, £1/11/6 per term. (*b* ii) (Mr. A. R. Hinks.) *Field Astronomy*. Michaelmas Term. Fee, £1/1/-. (*c*) (Dr. J. E. Marr, F.R.S.) *Geology and Scenery* (*Geomorphology*). Lent Term. Fee, £1/1/-. (*d* i) (Professor J. Stanley Gardiner, F.R.S.) *Oceanography*. Easter Term. Fee, £1/1/-. (*d* ii) (Mr. P. Lake.) *Climatology*. Easter Term. Fee, £1/1/-. (*e*)** (Mr. H. Yule Oldham.) *History of Geography*. Easter Term. Fee, £1/1/-. (*f*) (Dr. A. C. Haddon, F.R.S.) *Anthropogeography*. (*Natural Conditions on Human Societies.*) Michaelmas and Lent Terms. Fee, £1/1/- per term.

Candidates who propose to take Geography in the Home and Indian Civil Service Examinations are recommended to take the Courses marked **. Papers are set by the Lecturers in Physical and Regional Geography and in Historical and Economic Geography at an additional fee of 10/6 per term. The Board has arranged for the following inclusive fees for lectures, papers, and practical work, to be paid in terminal instalments:—Diploma, Part I (Special Examination), £12/12/- per annum. Diploma, Part II, £12/12/- per annum. Diploma, Parts I and II, £18/18/- per annum. Lectures suitable for the Historical Tripos are given during the Michaelmas Term by Mr. H. Yule Oldham on the *Geography of Europe with special reference to Medieval and Modern History*.

Ordinary B.A. Degree in Geography.—Candidates for this degree must be matriculated members of the University, who have passed the *Previous Examination* (Parts I and II), the *General Examination* (Parts I and II), and the *Special Examination in Geography*, and have resided in the University for nine terms. The regulations for the *Special Examination in Geography* include the following:—(*a*) The examination shall take place twice in each year. (*b*) The first examination shall begin on the Wednesday, or, if the next day be Ascension Day, on the Tuesday next but two before the first day of General Admission to the B.A. Degree in the Easter Term. (*c*) The second examination shall begin on November 29 in each year, unless the day fall on a Sunday, in which case it shall begin on November 28. (*d*) The examination shall be open to all students who have entered on their ninth term at least, having previously kept eight terms, and having passed both parts of the Previous and of the General Examination; or who have passed examinations entitling them to proceed to any degree in the University in Arts, Law, Medicine, or Surgery. (*e*) The examiners shall arrange the names of those who pass the examination in three classes, the names in the first class being arranged in order of merit, and those in the second and third classes alphabetically. (*f*) The class-lists shall be published in the Senate House at the latest at 10 a.m. on the Thursday before the first day of General Admission in the Easter Term, and on the Tuesday before the day of General Admission in the Michaelmas Term. (*g*) The examination shall be partly in writing, partly oral and practical, and shall have reference to the following subjects:—Physical, Historical and Political, and Economic Geography, including Cartography, and (as voluntary subjects) the History of Geographical Discovery, and the Elements of Ethnology. It shall be conducted in accordance with a schedule published by the Board of Geographical Studies. (*h*) The two examinations in each year shall be conducted by examiners nominated by the Board of Geographical Studies and appointed by the Senate in the preceding Lent Term, and each examiner shall receive from the Geographical Education Fund such stipend as may be determined by the Board of Geographical Studies. (*i*) The examination shall consist of six papers, as follows: (1) Physical Geography, (2) Historical and Political Geography, (3) Economic and Commercial Geography, (4) Cartography, (5) History of Geographical Discovery, (6) Elements of Ethnology. Papers (5) and (6) shall be voluntary, that is to say, students shall not be required to present themselves for them, but the results shall be taken into account in assigning the places in the class-list; and marks shall be affixed to the names of those who pass satisfactorily in either of these papers. (*k*) Candidates for the Ordinary B.A. Degree who have already passed Part I of the Examination for the Diploma in Geography shall be regarded as having passed Part I of the Examination for the Diploma. The fee for admission to the Special Examination in Geography is £3.

6. *Diploma in Geography*.—Candidates for the Diploma in Geography need not be members of the University. The Regulations for the Examination include the following:—1. An examination for a Diploma in Geography shall be held once in the year, or, if the Board of Geographical Studies should think it expedient, more than once. 2. The conditions under which candidates may be admitted to the examination shall be determined by the Senate, on the recommendation of the Board. 3. The examination shall have reference to the several branches of Geographical Science, treated in an advanced and comprehensive manner. 4. The subjects to be included in examination shall be fixed from time to time by the Senate, on the recommendation of the Board. 5. Candidates who present themselves for the examination shall be required to pay fees to be fixed from time to time by the Board. 6. A candidate who has passed the examination to the satisfaction of the examiners shall be entitled to a Diploma testifying to his competent knowledge of Geographical Science. 7. It shall be the duty of the Board to fix the number of examiners for the examination; to nominate them for election by the Senate; to fix the times of the examinations; to fix the payments of examiners, and the fees to be paid by candidates. 8. The examination shall be in two parts. 9. Part I shall include the subjects for the *Special Examination in Geography*; it shall be conducted by means of the papers set for that examination, and shall be held at the same times and in the same manner. 10. Part II shall include the following subjects: (*a*) Regional Geography, (*b*) Surveying and Mapping, (*c*) Geomorphology, (*d*) Oceanography and Climatology, (*e*) History of Geography, (*f*) Anthropogeography. Candidates shall be required to take at least four of the above subjects. 11. No candidate shall be admitted to Part II until (either in the same or in a previous term) he has satisfied the examiners in Part I. Part I of the Examination is always held twice in the year, being the same as the Special Examination. Part II of the Examination is held in the Easter Term, after the publication of the Class-list for Part I. The fee for admission to Part I is £3. The fee for admission to Part II is, for members of the University, £3; and, for persons not members of the University, £5. Applications for admission and fees should be sent to the University Registrary.

Schedules.—The Board of Geographical Studies have defined the range of the several examinations as follows:—

Schedule for the Special Examination in Geography and Part I of the Examination for the Diploma in Geography.—(1) *Physical Geography*. Form and motions of the Earth. Elementary Climatology and Oceanography. Typical forms of land configuration, their distribution and modes of formation. (2) *Historical and Political Geography*. The historical development and political partition of the different regions of the World, with a consideration of the influence of their physical features. A more detailed knowledge of the geography of a selected region (for 1911 and 1912, North America). (3) *Economic and Commercial Geography*. The economic growth of the different regions of the World, and the main lines of commerce and communication by land and sea in past and present times. A more detailed knowledge of a selected region (for 1911 and 1912, *North America*). (4) *Cartography*. The construction and use of maps. A general knowledge of the methods of exploratory surveying, excluding astronomical methods. The candidate will be examined orally and practically on maps, and on the instruments used in the above. Any candidate who can produce field work done by himself will be examined thereon and will receive special credit for good work. (5) *History of Geographical Discovery*. The outlines of the history of geographical discovery, with special questions on a selected region or period (for 1910, *The Fifteenth Century*; for 1911, *The Sixteenth Century*). (6) *Elements of Ethnology*. The principal races of mankind, their migrations and present distribution.

Schedule for Part II of the Examination for the Diploma in Geography.—The Examination will be partly in writing, partly oral and practical, and will include the following subjects: (*a*) *Regional Geography*. The physical regions of the World; coastal outline and land-relief; climatic conditions and river-systems. Distribution of population in relation to natural resources and conditions. Relation of political partition and economic conditions to physical features. (*b*) *Surveying and Mapping*. The elements of geodetic surveying: its objects and methods. Topographical surveying: base-measurement, triangulation by theodolite, plane-tabling, traverses, heights and contours by clinometer. Determination of mean sea-level. Field Astronomy. Any candidate who can produce examples of field work and of field astronomical observations and computations made by himself will be examined thereon and will receive special credit for good work. (*c*) *Geomorphology*. The present distribution of the lands and oceans, and proposed explanations of this distribution. The characters and genesis of the surface-features of the land, including the coast-lines; the influence of earth-movements, erosion, accumulation, and volcanic action. Geographical cycles; the growth and degradation of land-masses. (*d*) i *Oceanography and* ii *Climatology*. i. The surface-divisions and subaqueous contours of the oceans. The distribution of temperature and salinity. Oceanic circulation. Tides. Marine deposits. ii. Distribution of atmospheric temperature, pressure, winds, and precipitation. (*e*) *History of Geography*. The evolution of geographical conceptions, and the history of geographical discovery. (*f*) *Anthropogeography*. The classification of the races of mankind, and the physical characters on which it is based. The geographical distribution of races according to continents. The influence of geographical environment on the life, arts, social organisation, and migrations of the more important peoples.

UNIVERSITY OF LONDON.

Appointed teachers in Geography: L. W. Lyde, M.A., University College, H. J. Mackinder, M.A., Reader in Geography (London School of Economics), J. F. Unstead, M.A., Birkbeck College.

Geography is compulsory for the Intermediate Examination in Economics, optional for the Intermediate and Final Examination in Arts, also optional for the B.A. (pass). Candidates for the B.Sc. (Econ.) Honours must attend a course of instruction in Geography applied to definite economic or political problems.

Intermediate Arts Examination (*two Papers*).

General Geography.—The distribution of land and water. The leading facts of wind and water circulation. The objects and relative value of Mercator's, the orthographic and the conic projections.

Regional Geography.—The great divisions of the World considered under the following heads:—Superficial configuration, together with the leading facts of the distribution of soils, rocks and minerals of economic importance. The reaction of configuration upon air and

water circulation and the resulting local climates. The river systems as related to configuration and climate. The influence of the foregoing physical factors on agricultural production and the supply of animal and vegetable products independently of agriculture. The sources of mechanical power. The distribution of population as related to the foregoing physical factors and as influencing labour supply and the value of land. The localization of industries as determined by all the foregoing factors. Transport. Trade centres and trade routes. States, &c., conditioned by geographical circumstances—physical, economic, and strategic.

Intermediate Economics Examination (one Paper in Geography, with special reference to Industry, Commerce, and Politics) Syllabus—

General Geography.—The distribution of land and water. The leading facts of wind and water circulation.

Regional Geography.—The great divisions of the World considered under the following heads:—Superficial configuration together with the leading facts of the distribution of soils and rocks and minerals of economic importance. The reaction of configuration upon air and water circulation and the resulting local climates. The river systems as related to configuration and climate. The influence of the foregoing physical factors on agricultural production and the supply of animal and vegetable products independently of agriculture. The sources of mechanical power. The distribution of population as related to the foregoing physical factors and as influencing labour supply and the value of land. The localization of industries as determined by all the foregoing factors. Transport. Trade centres and trade routes. The geographical circumstances which influence the economic and strategical position of States.

Art (Final Pass), B.A. (two Papers, three hours each, and a Practical Examination)—

The subjects of the Intermediate Examination and, in addition, the following:—The Geography of Europe and of the parts of Asia and Africa bordering the Mediterranean considered in greater detail and with special reference to the distribution of land forms and the influence of the physical conditions on Political Geography. Candidates will also be required to show a wider knowledge of the principal map projections from the points of view indicated in the syllabus for the Intermediate Examination, and to show a knowledge of the methods by which the data are collected for cartographical purposes.

Practical.—Candidates will be expected to be able to measure angles and distances, to use a plane-table, a prismatic compass, a clinometer, and an aneroid barometer, to read and measure maps, to draw sections showing vertical relief, to convert contoured into hachured maps, and to express cartographically (that is, by means of isotherms, isobars, and other isometrical lines, shaded or tinted areas, and other signs) any given data relating to climate, population, and similar subjects.

UNIVERSITY COLLEGE.

Department since 1903.

E. J. Garwood, M.A., Yates-Goldsmid Professor of Physical Geography; L. W. Lyde, M.A., Professor of Economic Geography; M. T. M. Ormsby, M.Inst.C.E.I. Lecturer in Surveying.

(Professor Garwood.) An Introductory Course on the Physical Basis of Geography. A Course of Lectures on Surface Features of the Globe, with special reference to the distribution of land and water (with allied climatic problems) and to the distribution of soils, rocks, and minerals of economic importance. Fee per term, £1/1/-. (Professor Lyde.) A Course of Lectures on Regional Geography, with special reference to the influence of physical features on the development and political units, the production of plant and animal products, and the distribution of population and industries (with allied transport problems). Fee per term, £1/1/-. (Professor Lyde.) A Course of Lectures on Europe and the Mediterranean lands of Asia and Africa, with special reference to the relations of Physical Geography to Political and Historical Geography. Fee per term, £1/1/-. (Mr. Ormsby.) A Course of Lectures on Instruments and Maps, with special reference to the use of plane table, prismatic compass, clinometer, aneroid barometer, and to the drawing of relief-sections, the conversion of contour into hachure, and the cartographic expression of given data. Fee per term, £1/1/-. (Professor Lyde.) A Course of Lectures on 'Mathematical Geography and other aspects of the Science of importance in their educational bearing.' Fee per term, £1/1/-.

LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE.

One of the largest class rooms in the buildings has been fitted with geographical equipment, and is very largely made use of by the senior geographical students engaged in carrying out individual pieces of work.

H. J. Mackinder, M.A., Reader in Geography in the University of London; A. J. Sargent, M.A., Reader in Foreign Trade in the University of London; Miss A. T. Robinson, B.Sc., Demonstrator. The two former are recognised teachers in the University.

Courses arranged in accordance with the syllabuses of examination, for which see above. The general plan of courses for next year will practically repeat this year's, with a seminar in addition to the course for advanced students in Detailed Geography, which has

now been in successful progress during two sessions, along with the courses set out below:—1. (Mr. Mackinder and Mr. Sargent.) Courses in *Geography* (weekly, for three terms), and in *Historical Geography*, for second and third year students (once weekly, two terms). 2. (Mr. Mackinder, Mr. Sargent, and Miss Robinson.) Two *Map Classes* for practical instruction (each once weekly, for two terms).

Map classes and a class in detailed Geography, concerned chiefly with the construction and use of maps.

The cost in fees of a year's training in Geography for a student who took up all the courses offered would be approximately £8 8s. The seminar is only open to students doing original work. The fee is £3 3s. for the session.

BIRKBECK COLLEGE.

J. F. Unstead, M.A.

First Term: General Principles of Geography. Second Term: The British Isles and the Continent of Europe. Third Term: The Remaining Continents. Fees, 8/- per term; 21/- per session.

Geography is an optional subject in the Intermediate Arts and Intermediate Economics Degree Examinations; the following course covers the requirements of these examinations.

KING'S COLLEGE.

T. F. Sibly, D.Sc., F.G.S., Lecturer.

A Course of about twenty lectures on *Physical Geography* (the Form and Motions of the Earth: the Face of the Earth: Elementary Meteorology and Climatology) during last term, followed possibly in later terms by others on Elementary Oceanography, and on Changes affecting the Earth's Crust, the Characters and Mode of Origin of Surface Features.

Physical Geography is taken with Geology. Map work is done.

Fee, £1/1/- per term.

UNIVERSITY OF DURHAM.

ARMSTRONG COLLEGE, NEWCASTLE-ON-TYNE.

No Department of Geography, but some work is done in the Day Training Department.

UNIVERSITY OF MANCHESTER.

Lecturer, 1892.

John McFarlane, M.A., M.Com.

Matriculation Class.—A class will be arranged provided a sufficient number of students present themselves for it. Fee, £2/12/6. *Intermediate Class.*—(1) The geography of the World, with special reference to the following subjects:—The division of the Earth into a number of natural regions determined by physical configuration, space relations and climate. The characteristic vegetation and animal life of these regions. The influence of environment upon man, the geographical conditions determining human settlements, economic activities and communications, the development of civilisation, the growth of nationalities and present political and economic development. (2) The geography of a small local region. Fee, £2/12/6. *Final (General) Class.*—In this class the subjects studied in the Intermediate Class will be applied in more detail to some specified region or regions of the Earth. In 1910-11 Europe will be the special region. For the benefit of those who have not taken the Intermediate Class a few special lectures will be given at the beginning of the session. Fee, £2/12/6. *Final Special.*—(1) Europe, with prescribed reading in connection therewith. (2) The construction and reading of maps, and the practical use of simple geographical instruments. This part of the course will involve a study of some small local region. *Political and Economic Geography.*—The importance of the geographical factor in political and economic development. Climate and the various conditions upon which it depends. The climatic regions of the World. The influence which climate exerts on man and his distribution, and the extent to which he has been able to modify its influence. Vegetation as determined by climatic and adaptive considerations. The relation between the vegetation zones of the World and their economic development. The principal economic plants, the conditions necessary for their growth, and the regions in which they are grown. The races of mankind and their general distribution. The physical, mental, and moral characteristics of the leading peoples at the present time, and the importance of their geographical environment. The development of communications. Physical controls and the modifying influence of human action and invention. The chief lines of communication by land and sea. The geographical distribution of the more important minerals of commercial value, the conditions in which they are found, and the uses to which they are

put. The growth of manufactures. The geographical factors accounting for the localisation and development of the more important manufactures in different parts of the World at the present time. The leading trading nations and their geographical advantages for production and distribution. The principal elements in international trade. The extent to which natural conditions may be modified by human action. Geographical considerations accounting for the political growth of States and their application to the principal political communities of the present day. This course must be attended by candidates for the B.Com. degree. Fee, £2/12/6.—*The Monsoon Countries of Asia*, with special reference to political and economic development. This course, or one of the alternate courses in other special subjects in geography which will be offered in subsequent years, must be attended by candidates for the B.Com. who offer a special subject in geography. Fee, £1/11/6.—*Practical Class.* A special class will be formed for work of a practical nature. Among the subjects to be dealt with will be the construction and reading of maps, the use of the plane table, and other simple instruments, &c. A certain amount of field work will be done in the summer term. Admission will be free to members of the Geography classes.—*Geography Seminar.* At an hour to be arranged.

5. Compulsory for degree of Bachelor of Commerce. Optional for B.A. degree at Intermediate, Final General and Final Special stages. Optional for B.A. Honours in Political and Economic Science, and for M.A.

UNIVERSITY OF BIRMINGHAM.

There is a combined Department of Geology and Geography.

Charles Lapworth, F.R.S., Professor; Theodore Groom, D.Sc., Senior Lecturer; Frank Raw, B.Sc., Special Lecturer.

The University Examination in Geography is optional in (*a*) Intermediate Arts, (*b*) Degree in Commerce, (*c*) Certificate for Students in Day Training College.

There are three Courses of Lectures in Geography being delivered during the present Session, namely—(*a*) The Intermediate Course for students in Intermediate Arts and others; (*b*) The Commercial Course, attended by students in Commerce; (*c*) The Certificate Course, attended by students of the Day Training College. Detailed syllabus of these courses follows:—

(*a*) *Intermediate Course (three times weekly)*—

Physical.—Atmosphere—Weather, its local and regional variation, weather charts, storm warnings, and weather forecasts. Climates, their causes and present and past distribution. Electric and magnetic phenomena; lightning, aurora, variation of the compass; luminous phenomena; refraction, absorption, &c. Hydrosphere—Form of the ocean floor, and its relation to that of the continents. Deep water temperatures and currents. Distribution of life in ocean waters. Abysmal and deep sea deposits. The tides. Lithosphere—The composition and arrangement of the materials of the earth-crust. The rock formations. Crust movements, earthquakes and volcanoes, and their effects. General relief of the land, and its causes; plateaux, mountains, plains, and valleys, and their origin. Landscape—Origin and development of landscape features. Form and development of rivers and river basins. Form and development of coast lines. Biological Geography—Distribution of terrestrial life. Characteristics and relations of the different biological regions.

Political.—Man—The races of mankind, modes of existence, grades of civilisation, modes of government, industries and commerce. Europe—Inter-relations of relief contour and drainage; distribution of climates, flora, and fauna; natural and cultivated productions. Distribution of people as regards race, nationality, and language; chief countries and their centres of population and industry. Outlines of the geography of France, Germany, Italy, Russia, together with one of the following—1. Asia: (*a*) Asia in general; (*b*) India; (*c*) China; (*d*) Japan. 2. Africa: (*a*) Africa in general; (*b*) Egypt; (*c*) British Africa. 3. America: (*a*) America in general; (*b*) British North America; (*c*) United States. 4. Australasia: (*a*) Australasia in general; (*b*) Australia; (*c*) New Zealand.

Practical.—The reading and use of topographical maps on the 6 in. and 1 in. scale; measurement of distances, directions, and areas; conversion of scales; representation of relief, drainage, and human works; tracing of water-sheds and drawing of sections to scale. The reading of the thermometer, barometer, compass, &c. Making of maps and plans, (*a*) by pacing and compass, and (*b*) by plane table. Outdoor study of the topography of some special part of the Birmingham District and its causes. Map projections, mode of construction, and special uses of each. General application of maps and graphs.

(*b*) *Certificate Course (twice weekly)*—

Physical and Political Geography of Europe. Practical Geography, as in the Intermediate Course.

(*c*) *Commercial Course (twice weekly)*—

The Principles of Geography, with special reference to their application to Commerce.

General (to be taken in the Ordinary Classes).—Movements of the Earth and their effects in length of day, seasons, latitude and longitude, local time. The Atmosphere; temperature, winds, rain, climate. The Land and Water; distribution of land and water, extent and character of coast lines. 1. Water: currents and tides. 2. Land: general relief of the continents, mountains, plateaux, valleys, plains, rivers, and lakes.

Special.—Mineral Products of Economic Value—Distribution of rocks and soils, building and road-making materials, clays, fuels, ores, mineral manures. Organic Products of Economic Value.—Food materials and their distribution, textiles, skins, timber, &c. Man in relation to commerce, race, languages, customs, governments. The Commercial Geography of areas specially selected to suit the requirements of the students.

Practical Work.—Study and Interpretation of maps.

7. The Sessional Fees for the Course of Intermediate Geography is £3/13/6; for that of Commercial Geography, £3/3/-.

UNIVERSITY OF LIVERPOOL.

E. C. K. Gonner, M.A., Brunner Professor of Economics; P. M. Roxby, B.A., Lecturer in Regional Geography; Edith M. Ward, B.Sc., Tutor; G. Hickling, Lecturer in Palæontology, University of Manchester, Special Lecturer in Course C (Geomorphology).

Courses for Current Year, and Fees.—Course A. *General Principles of Geography*, with special reference to Mediterranean and Western Europe. Three terms, £3. Course B. *Principles of Racial, Political and Economic Geography.* Three terms, £2. Course C. *Geomorphology.* One term, £1. Course D. *The Political and Economic Geography of Selected Areas.* Three terms, £3. Course E. *Principles of Historical Geography and the Historical Geography of the United Kingdom.* Three terms, £2. Course F. *Commercial Geography.* One term, £1. Course G. *The Geography of the British Isles.* Two terms, £1/10/-. Course H. *The Geography of the Mediterranean Basin and Western Europe.* Three terms, £2. Course I. *Tutorial Course for Students in Course A.* Three terms, £2. Course J. *Tutorial Course for Students in Course B and C.* Three terms, £2. Course K. *Tutorial Course for Students in Course D and E.* Three terms, £2. Course L. *Advanced Class for M.A. Students.* Three terms, £2.

Degree of B.A.—Intermediate: Course A. Fee, £1. Final: As an additional subject either (i) Course A (if not already taken), supplemented by study of special region; or (ii) Course B, if A has been taken in Intermediate. As a two-year subject—(i) If A not taken in Intermediate, 1st year, A; 2nd year, B and C. (ii) If A taken in Intermediate, 1st year, B and C; 2nd year, D and E. In each of these examinations geography is optional, except in the case of University Training College students taking the B.A. and a four years course of training, for whom it is compulsory (as a one, two or three-year subject). Fee, £1. *Degree of B.Com.Sc.*—Final examination, Course F compulsory. *Honours School of History.*—First part, Course H. Fee, £1. *Degree of B.Sc.*—For students in Training College, Course C. *Degree of M.A.*—Course L. General Principles (advanced), two papers. A dissertation, or one paper on special region or aspect of geographical study. Fee, £1.

Course A—General Principles of Geography, with special reference to Mediterranean and Western Europe.—1. *The Subject Matter of Geography.* Its aims and methods. The component parts of the subject and their relationship. 2. *The Content of Physical Geography*—(*a*) *Elementary Geomorphology.* The study of scenery. The principal types of land-forms, their mode of origin, characteristics and broad distribution on the Earth's surface. The relations of Geology and Physical Geography. The influence of rock structure on land-forms and on soil conditions. The Geological formations and configuration of the British Isles to be studied in the light of the general principles discussed. The development and characteristics of river systems in relation to land-forms and the agents modifying them. (*b*) *General Principles of Climatology.* (1) The factors determining climate; (2) The broad distribution of atmospheric pressure, temperature and rainfall over the Earth's surface; (3) The climatic regions of the world and their characteristics. (*c*) *Biogeography.* The distribution of vegetable and animal life as determined by the physical conditions already discussed. The chief vegetation regions of the world and their characteristics. 3. *Human Geography.* The interaction of physical conditions and human activities. The influence of particular physical conditions (configuration, climate, &c.) upon human development. The regional treatment of Economic Geography. A more detailed regional survey of (*a*) The British Isles, (*b*) Mediterranean and Western Europe, with special emphasis on the political and economic consequences of physical conditions.

Chief Subjects for discussion in Tutorial Classes, and from which Home Work will be set.—1. Representation of relief. Simple map making and map reading. Drawing of sections. Measurement of distance, &c. 2. (*a*) Classification of land forms of the Continent; (*b*) Rocks of the Earth's coast, and the agents affecting scenery; (*c*) Geological formations and configuration of British Isles; (*d*) Drainage systems of regions in relation to their configuration—the river systems of the Continents (General) and of the British Isles. 3. (*a*) The pressure belts of the world; (*b*) The chief wind systems and their movements; (*c*) The distribution of temperature; (*d*) The distribution of rainfall. Representation of atmospheric pressure, temperature and rainfall on maps. 4. (*a*) The characteristics and distribution of the chief vegetation zones; (*b*) Human development characteristic of the different vegetation

zones: 5. Effects of (a) topography and (b) climate on the human development of different regions. 6. (a) Geographical determination of the sites of towns and various types of settlement; (b) Determination of Ocean and Land Routes; (c, d) The factors determining the distribution of agricultural crops and of industries. 7. The Economic Geography and Foreign Trade of the British Isles, and in less detail of the countries of Western and Mediterranean Europe.

Course B—Principles of Racial, Political and Economic Geography.—1. Human Geography as a Science. 2. Classification of Climatic and Vegetation zones in relation to human life. Determination and Characteristics of the Major 'Natural Regions' of the World. 3. The human development and social organisation characteristic of the various 'Natural Regions.' Relationship of the 'Natural Regions.' Factors which have determined the movement and present distribution of the chief races and 'social types.' 4. The Economic Geography of the 'Natural Regions.' Present position and trend of development. 5. The Political Division of the Continents in relation to their division into 'Natural Regions.'

All Students taking Geography for the B.A. Degree begin with Course A (General Principles of Geography). If they are taking it for three years, *i.e.* both for the Intermediate Examination and as a two-year Final subject, the order of study is as follows:—*Intermediate Examination.* 1st year, General Principles of Geography. 2nd year, (a) Principles of Racial, Political and Economic Geography; (b) Geomorphology. *Final Examination.* 3rd year, (a) The Economic and Political Geography of Selected Areas; (b) The Relations of History and Geography and the Historical Geography of the United Kingdom.

Number of Students in Chief Courses.—Course A, 65; B, 20; C, 20; F, 10; G, 30; H, 3. M.A. Students, 6. Total number of students taking Geography in one or more courses, approximately 100.

UNIVERSITY OF LEEDS.

DEPARTMENT OF COMMERCE.

Practically the only Geography teaching is in connection with the diploma in Commerce, First Year (see below).

Professor D. H. MacGregor; A. Gilligan, B.Sc.

The economic geography of the British Empire is a compulsory subject in the first year of the course, both for the degree of Bachelor of Commerce and for the Diploma in Commerce. Certain candidates for the former may substitute for a modern language the economic geography of the principal foreign countries, which is also a compulsory subject in the second year course for the diploma. Physical Geography of the United Kingdom is a subject in the Arts Intermediate for candidates for a Degree with Honours in Political and Economic Science.

The principal course (two hours a week) deals with the physical conditions of the chief parts of the Empire, their chief products, and trade relations; the bearing of physical conditions on commercial federation will be considered. Attention will be given to the United Kingdom, Canada, South Africa, Egypt, Australasia, and India.

Fee for the course above, £2/12/6.

UNIVERSITY OF SHEFFIELD.

Department of Geography since 1909.

Lecturer, R. N. Rudmose Brown, D.Sc.

Matriculation Course (twice weekly).—A course to meet the requirements of the Matriculation Examination.

Final Course, First Year (three times weekly).—1. Structural Geography—The relief of the globe: land forms considered as regards their origin, their place in the structure of the earth, their relation to man. Submarine relief. The climates of the world and their relation to man. Ocean currents. Human Geography—The geographical factor in human activity: human occupations as determined by physical and vegetational features. The distribution of population. The distribution of the races of man. II. Regional Geography—The continents: structure, climate, vegetation, and population. Natural regions: the study of these in detail, with attention to economic geography. More special reference o the British Isles.

Final Course, Second Year (five times weekly).—I. Regional Geography—A detailed study of the geography of selected regions. II. Economic and Political Geography—Distribution of human activities and settlements. Development of trade routes. Expansion of states. Colonisation. Racial problems. III. Structural Geography and Geomorphology—The structure of the continents and the history of their development. Land forms in relation to their geological structure. Special study of particular regions. IV. Climatology—The climates of the world considered as regards their origin, their distribution, their relation to man and human activity. Changes of climate. V. Oceanography—Ocean basins. Submarine relief. Deep-sea deposits. Temperature and currents of the ocean.

Methods of oceanography. VI. History of Geography and Exploration—The evolution the map of the world. The history of geographical exploration. Geographical proble of to-day.

Final Course, First Year (three hours a week).—Exercises in map reading, section and map making. Map projections. Cartographical representation of statistics. Latitu and longitude. Time Elementary plane table surveying.

Final Course Second Year (four hours a week).—Surveying, contours and levelli Map construction. The use of meteorological apparatus. Field excursions, including regional survey of a selected area to be worked out by the student.

Geography is compulsory for no examination, but is optional for (1) Matriculati (2) Final B.Sc., where it is one of ten subjects, three of which must be taken.

Final B.Sc. Course covers two years. Fees in first year, including a course in Geolo which is compulsory, £10/10/-; fees in second year, £9/9/-. In addition, there is registration fee of £1/5/-, payable annually by degree students. A course is also given the B.A. degree to Honours students in History. The two years provide a continuo course in the subject. Any of the courses indicated in the syllabus may be taken separate but, in that case, do not qualify for degrees.

UNIVERSITY OF BRISTOL.

No Department of Geography.

UNIVERSITY COLLEGE, READING.

H. N. Dickson, M.A., D.Sc.

Optional subject for the Associateship of the College.

First Year.—I. General Principles. (a) *Mathematical Geography.* The size a shape of the Earth. 'Sea-level.' The horizontal plane and the horizon. Altitude a azimuth. Great and small circles. Motions of the Earth. Apparent motions of the Su and Moon. Latitude, longitude, and time. The seasons. Gravitation. Ferrel's law. Ma and the construction of maps. Scales and conventional signs. Equidistant, equiangular, a equal area maps. The representation of heights. Contour maps. Sections. Statistic maps and diagrams. (b) *Physical Geography.* The Earth's surface: General distributi of land and sea. The Atmosphere: air and water vapour. Atmospheric temperature a pressure. Isobaric and Isothermal surfaces and lines. Clouds and rainfall. Methods observation. Planetary circulation of the atmosphere. The climatic belts. Land and w climates. Rainy and dry seasons. The chief climatic regions. The Sea: form, size, a depths of the oceans. Deep-sea deposits. Temperature and composition of sea-water. Tid Drift and stream currents. The Land: divisions; lowlands, uplands, and highlands. La forms: plans, hollows, scarps, mountains, valleys. Types of drainage areas. Land su stance: characteristic properties of clay, sandstone, and limestone rocks. Soils. Usef minerals. Special land features: glaciers, lakes, waterfalls, springs, volcanoes, &c. (c) *Ge graphy of Plants and Animals.* Forests and grass lands. Deserts. Products of cultivati in different regions. Animals characteristic of the vegetative regions. Sea animals: th fishing grounds. (d) *Geography of Man.* (1) The races of mankind. (2) The influence natural conditions on human occupations and modes of life, and on the distribution of popul tion (including its aggregation in towns). The means of communication and transpor Development of commerce. Modifying effects of government, and of the progress of know ledge and invention. II. Geography of North America.

Second Year.—I. (a) Climatic Regions of the Globe. (b) Geography of Europ (c) Practical Work. II. Geography of North America.

UNIVERSITY COLLEGE, NOTTINGHAM.

No Department of Geography.

Dr. Swinnerton, Physical Geography and Geology; Professor A. Henderson.

(a) Physical Geography for Intermediate B.Sc. (Geology), London. (b) Geography connection with History Courses. Board of Education Training College Regulations. Geological excursions.

WALES.

UNIVERSITY OF WALES.

See *Geographical Teacher*, Vol. IV, p. 246.

UNIVERSITY COLLEGE OF WALES, ABERYSTWYTH.

Department since 1908.

H. J. Fleure, D.Sc., Lecturer in Geography, assisted in this respect by O. T. Jones, M.A., D.Sc., Professor of Physical Geography and Geology, and T. Stanley Roberts, M.A., Assistant-Professor of Colonial History.

A Course on General and Regional Geography, 70 lectures, supplemented by laboratory exercise and some field classes. A Course on Geographical Topics of current interest, about 15 lectures. A Course on Physical Geography, 60 lectures and 90 hours' practical work. A Course on Historical Geography of the British Empire. The College fees are about £12 per annum for students without laboratory work, and £16 (maximum) for those taking laboratory work. These fees admit students to all classes in all departments of the College.

The College grants a certificate to persons satisfying the Department in the work enumerated above. All these courses may be taken in one session (October to June) by a person with sufficient preliminary education. The work in Physical Geography is tested by an examination held by the University of Wales, as that is an optional subject of study for persons proceeding to a degree in Science or Arts. The work in the other courses is tested by the teachers.

The University of Wales considers theses on geographical subjects in support of the candidature of its graduates (B.A. or B.Sc.) for the higher degree of Magister in Recognition of Research.

A special feature of the work of the Department is the organisation of research, of collections of all kinds, &c., relating to Wales. Members of the Geographical Association who are teachers in Wales are invited to correspond with the Lecturer if they are interested in the study of their own localities from a geographical point of view.

UNIVERSITY COLLEGE OF SOUTH WALES, CARDIFF.

No Geography Courses as such are held, but the Intermediate Course in Geology contains much Physical Geography (including practical work).

W. S. Boulton, B.Sc., Professor of Geology.

UNIVERSITY COLLEGE OF NORTH WALES, BANGOR.

No Department of Geography.

SCOTLAND.

UNIVERSITY OF ST. ANDREWS, AND UNIVERSITY COLLEGE, DUNDEE.

No Department of Geography.

UNIVERSITY OF GLASGOW.

Geographical Department since 1909.

J. D. Falconer, B.Sc., Lecturer, has just been appointed as successor to Captain Lyons, F.R.S., and his syllabus is not yet published.

May be taken as a subject in graduation for the M.A. Degree. £4/4/-.

UNIVERSITY OF ABERDEEN.

No Department of Geography.

UNIVERSITY OF EDINBURGH.

Geographical Department since 1908.

Geo. G. Chisholm, M.A., B.Sc., Edinburgh, Lecturer in Geography.

(a) Ordinary Course in Geography, embracing lectures on Mondays, Wednesdays and Fridays during the three terms of the year, with practical work one hour each week in the spring and summer terms. This Course deals with Physical Geography, with special reference to the influence of local physical conditions in man; Economic and Political Geography, more particularly as illustrated in the Mediterranean Region and Central and Western Europe, and the history of geographical ideas. (b) Special Advanced Half-Course, held during the spring term, dealing in a fuller manner than in the ordinary course with the history of exploration and of geographical ideas, cartography, the distribution of typical land forms, and the distribution of plants and animals, with reference to their importance to man,

and of the races of mankind. (c) Honours Half-Course. An analysis of the economic ar commercial development of the leading commercial countries of the world during the la forty or fifty years with special reference to the geographical conditions that have influence that development.

The practical work consists chiefly of map drawing and exercises in climatology.

Geography is optional for M.A. and also in the Honours Examination in Econom Science.

Syllabus for ordinary degree of M.A. The class lectures and practical work, and th relevant portions of Mills' *Realm of Nature*, Hogarth's *Nearer East*, the lecturer's *Handboo of Commercial Geography*, and the volumes on *Europe* in *Stanford's Compendium of Ge graphy and Travel*. Honours. The lectures and the following parts of the lecturer's *Hand book of Commercial Geography*, 7th edition:—Introduction to the first and fourth edition the section on the general facts relating to the production, distribution, and exchange commodities, the sections on the principal commodities, and pp. 213 to the end; also Chapter XIII—XIX of Partsch's *Central Europe*.

Fee for ordinary course, £4/4/-; for each of the half-courses, £3/3/-.

IRELAND.

UNIVERSITY OF DUBLIN.

No Department of Geography.

NATIONAL UNIVERSITY OF IRELAND.

UNIVERSITY COLLEGE, CORK.

Isaac Swain, B.A., A.R.C.Sc.I., M.R.I.A., Professor of Geology and Geography.

Physical Geography and Geology is optional at first University examination. Commer cial Geography compulsory for B.Com. Fee included with other subjects. Physical Geo graphy and Geology for first year students, two terms, £1/10/-. Commercial Geography second year, £2.

The following is the syllabus for Commercial Geography:—

First Year.—Physical Geography. Earth's position in Universe, its form, size, densit and motion. Atmosphere and atmospheric phenomena. Climate. Oceanography: Constitu tion of the crust: action of weather, rivers, glaciers and the sea in denudation. Formation consolidation and cementation of sediments: Volcanoes: Earthquakes: The chief rock forming minerals: Characters of the chief types of igneous and sedimentary rocks: Evolu tion of scenery.

Second Year.—Uses of Commercial Geography. Causes tending to centralisation an decentralisation of manufacturing industries. General facts relating to production, distribu tion and exchange of commodities. The geographical distribution of the more importan minerals of economic value. The economic characteristics of chief countries of the world Natural lines of communication. Distribution and classification of commercial centre Sources of motive power in connection with the more important areas of the world. Trad routes. Natural and industrial history of commercial products.

Field excursions will be conducted in the third term, and demonstrations given various points.

QUEEN'S UNIVERSITY, BELFAST.

There is a Lecturer in Geology and Geography, Arthur R. Dwerryhouse, D.Sc., but n specially equipped Department of Geography.

Geography is an optional subject in the Matriculation Examination, for which, however no instruction is given by the University.