# Developments in Brazilian Geography during the Twentieth Century

# Kempton E. Webb

Department of Geography and Environmental Science
William Paterson College
Wayne, NI 07470

## **INTRODUCTION**

The remarkable career of Preston E. James parallels in many striking ways the development of the Brazilian nation during the same period. More specifically, James and the field of geography in Brazil have had a mutually beneficial relationship for almost fifty years. In this essay I shall distinguish two principal periods in the development of Brazilian Geography: 1) 1920-1950 when Europeans (mainly French and Germans) dominated the geographical literature on Brazil thereby making knowledge of French and German essential; and 2) 1950-1980, covering the meteoric development of an indigenous Brazilian geography that was soundly conceived on a national and state scale and which has become an integral part of the educational and planning sectors of the Brazilian nation.

James' career as a geographer spanned two whole generations and has enabled him to witness and to report on the incredible processes and patterns of transformation of Brazil from a truly underdeveloped country in the early 1900s to the country that has become a major world industrial power.

#### **GEOGRAPHY BEFORE 1920**

In this section I submit that the quest for knowledge in the "pre-scientific" period of Brazil was basically for its own sake. In our present time the quest for knowledge of the earth has a graver significance: namely, the survival of nations *per se*, and the survival of our total world environment. By looking at geographical writings about Brazil in the nineteenth and twentieth centuries we can trace the evolution of human perceptions about Brazil and follow the developments of geographical methodology in that country.

Geographic methodology in nineteenth century Brazil consisted largely of observations made mainly by travelling European scholars, which were voluminously recorded, published and read mostly by people who would never be in a position to corroborate or dispute the published record. I should like to single out one such outstanding though lesser known traveller, the geographer Grigori Ivanovich Langsdorff, who was the Russian counterpart and contemporary of Alexander Von Humboldt, especially with regard to the exploration and study of Brazil. (1)

The 200th anniversary of Langsdorff's birth was the occasion of a world conference in which I participated in Leningrad, sponsored by the Soviet Geographical Society in October, 1974, and devoted to his geographic contributions. A voluminous and meticulously displayed exhibit of Langsdorff's writings, maps, illustrations, and collections attested to the important role he played in developing geographical knowledge about Brazil in the early nineteenth century.

Over the past two hundred years, we have come full circle in our perceptions of the world. Only

our technology and the impact of man's actions is fundamentally different. Grigori Ivanovich Langsdorff (1774-1852) was a universal man whose boundless curiosity led him literally around the world, from the arctic to the tropics and from European scientific salons to the remote Indian *malocas* of Brazil. The grand theme that links the lives of Langsdorff and James with Brazilian geography is the age-old quest for knowledge of the earth and its significance.

In addition to Langsdorff, who brought a broad experience and expertise to his writings on Brazil, there were many other observers such as Charlevoix, Azara, Eschwege, Maximilian Wied-Neuwied, Spix and Martius, D'Orbigny, Sainte Hilaire, Tschudi, Hartt, Fonseca, Ehrenreich and Karl Steinen.

Langsdorff set the highest standards for himself and recognized the significance of each field worker's own perceptions. In 1812 he wrote that each observer has his own point of view by which he observes and judges new objects: he has his own distinct sphere in which he tries to include all which is in closest contact with his own knowledge and interests. I have tried to select for study those subjects which were of general interest; namely, the activities and customs of different peoples, their way of life, and the products of their lands, and the natural history of our journey. The rigorous love of truth represents not only an advantage, but also the obligation of each field worker and chronicler. (2)

Langsdorff probably brought a greater maturity and world experience to his South American writings than the majority of his contemporaries. He was no narrow specialist. His medical training and subsequent two and a half years in Lisbon not only exposed him to Portuguese people, whose economic concerns and sources of livelihood for centuries composed vast segments of the earth's surface. He also was exposed to the Portuguese language, an absolute requirement for a field worker concerned with cultural themes. His earlier field trips and writings in Europe were the basis for his claim to be included at the last minute on the Russian Circumnavigation Expedition (1803-1805). Langsdorff made close observations on that trip of the most diverse ecosystems including southern Brazil, Easter Island, the Marquesas, Sandwich Islands, Kamchatka, Japan and California. His broad "world view" was further supplemented by his experience as a Russian diplomat in Japan and in Brazil. All of this happened before his own monumental Russian Expedition to Brazil in 1821-1828.

Langsdorff personified the educated European consciousness that sought to look beyond national and cultural frontiers to learn about the ways of the world in the remotest corners of the earth. The early nineteenth century marked that phase in the development of scientific methodology and thought when the discrete pieces of information and isolated observations were the individual building blocks from which could be constructed the great museums of the world. The best of antiquity from Greece, Rome, Egypt, Persia and the Mayan and Inca realms was being "liberated" to the august museums of London, Hamburg, Paris, Leningrad, Berlin and New York.

In brief, the geographical methodology of nineteenth century Brazil consisted of outsiders looking in and "discovering" for themselves and for knowledge's own sake a vast tropical realm of exotic places, people, customs, flora and fauna. The native Brazilians played a minor role except as the objects of study.

# THE ESTABLISHMENT OF GEOGRAPHY IN BRAZIL, 1920-1950

The awakening of Preston James to the wonders of the wider world and eventually to the discipline of geography was the result of extensive travel and reading from a very early age. He toured Europe with his parents in 1910 and he travelled to Utica, New York, and Florida in subsequent years. And what an eventful period that was! Admiral Peary reached the North Pole in 1909, which resulted in many people avidly devouring books on arctic exploration, including Preston James, then ten years old. James also acquired a taste for presenting the results of personal observation and investigation before an audience. He relished the favorable response of an assembled group to his oral report on Halley's Comet that brightened the heavens in May, 1910. It is possible to state that Preston James had begun to travel, observe and discourse in public upon his findings by the tender age of eleven.

James' first sustained contact with Latin America involved a period from February to July, 1921, immediately following the completion of his Harvard M. A. in climatology. He travelled by ship, the only means in those days, and spent time in Colombia and the other Andean countries, searching for a suitable dissertation topic. A letter written to Isaiah Bowman at the American Geographical Society on August 5, 1921, indicated his interest in Trinidad, Colombia, the Guayaquil Lowlands and especially the challenge of crossing the Andes mountains:

#### Dear Dr. Bowman:

I am choosing a region in South America for my Doctor's thesis. Because of the expense of travel I must pick an area either along the north coast, or not far down the west coast. Three areas have seemed to me to offer good material for such work, especially in that they have definite limits, and are not too big for the exact and detailed study which should demand. The areas I have in mind are: The Island of Trinidad; the Magdalena River Valley; the Guayaquil Lowlands.

Can you make any suggestions which would help me to make my final choice, either in regard to these regions I have named, or regarding others?

In my recent trip I had the great good fortune to be unable to cross the Andes by the usual route to Mendoza. Instead I went into the Atacama Desert, thence to Uyuni, Bolivia, and into Argentina by way of Atocha and La Quiaca. Do you know of any detailed maps of this route? Has any one made a study of the Geology of this corner of Bolivia?

One more question: you are no doubt acquainted with the shore lines cut in the side of the low hills just east of Uyuni. Are these the terraces of the glacial lake, on which Poopo is the remnant? Have you any idea of the area covered by this lake? And how much further toward Atocha did the lake bed extend before the streams cut out the area into which the F.C.C.B. tracks run about an hour after leaving Uruni? (3)

That trip yielded not only the eventual dissertation *Geographic Factors in the Development of Transportation in South America* but also a flood of articles on Trinidad, the Atacama Desert, feats of railroading in the Andes (*Popular Mechanics Magazine*, April, 1924), cattle raising in Venezuela and the Tacna-Arica dispute.

From 1925 to 1935 James spent summers teaching the Michigan summer field course in Kentucky but took a sabbatical leave in 1930-31 to spend a most profitable first long period in Brazil. The range of his published articles subsequently broadened out to include colonization in southern Brazil, geopolitical structures in Latin America and urban geography (especially concerned with Belo Horizonte and Ouro Preto), but much of his field work was concentrated in southeastern Brazil (the Rio Doce valley) and concerned with surface features of southeastern Brazil.

James has always had a canny ability to locate and be able to use whatever sources of information existed. He also made efficient use of informants wherever he travelled as well as becoming part of the intellectual community in which he resided. His professional and personal friendships have endured over the decades. Carlos Delgado de Carvalho, Fabio de Macedo Guimaraes Soares and Jorge Zarur were just some of the early generation of Brazilian geographers who were to help shape the field of modern geography in Brazil. James was also in close contact with the leading European Brazilianists such as Deffontaines, Rawitcher, Waibel, Maack, DeMartonne, Mombeig, Pfeiffer, and Tricart.

A second protracted field season in Brazil from February to September, 1938, provided James with a last look before sending his monumental textbook *Latin America* off to press. That classic regional book on the geography of Latin America was literally twenty years in the making and it reflects the exhaustive field study, library and map study which he put into it. All of the maps were originals compiled by him from primary sources. Meanwhile within Brazil the stirrings of the discipline of geography were being felt.

The twentieth century awakening of modern geography in Brazil happened quickly after some thirty years of frustrated efforts by pioneer geographers, some with European educations such as Carlos Delgado de Carvalho, Everardo Backeuser, F. A. Raja Cabaglia and S. Froes Abreau. The convergence of several different processes conspired in the 1930s to launch the field of modern geography in Brazil. Hilgard O'Reilly Sternberg has pointed out that the field of geography really gained ground in Brazil only after: 1) the inclusion of subject in university programs from 1934; 2) the catalytic impact of the French geographer, Pierre Deffontaines, whose contagious enthusiasm drew many young men into the field of geography (Sao Paulo, 1934, Rio de Janeiro, 1938); and 3) the federal government's establishment of the Conselho Nacional de Geografia in 1937.

The status of the field of geography in Brazil as of 1950 has been well summarized by Professor Sternberg, who demonstrates the significance of the establishment of the subject in the high schools, as well as its progressive institutionalization in various key government ministries and agencies. (4)

# THE EXPANSION OF GEOGRAPHY IN BRAZIL, 1950-1980

Subsequent developments in Brazilian geography have incorporated the best of geographic methodology from abroad but have preserved a uniquely Brazilian focus upon the quest for knowledge of national space. Geography is not solely an academic subject in Brazil; it is the vigorous handmaiden of national, economic and regional development. There is a full and

complete articulation of the field from the university to the primary school level which other more developed countries could well emulate.

What were some of the primary developments in Brazilian geography after 1950? There was the increasing concern with geography in the regions, as evidenced in the addition of geographical journals in Paraná and Bahia states so that in the early 1960s approximately ten different geographical journals were appearing, many more than the United States had at that time.

The orientation of Brazilian geographers was still mainly French because of the affinity of Brazilians to French authors and language, which also was easier for them to learn than German or English. Many of the senior Brazilian geographers studied for their doctorates in French universities. Speridiao Faissol was the first Brazilian geographer to earn an American Ph.D., studying with James at Syracuse. Ney Strauch and Palmyra Monteiro also studied at Syracuse.

There was a definite German influence in southern Brazil mainly due to Rainhard Maack (Paraná), Gottfried Pfeiffer (Rio Grande do Sul), and Leo Waibel and the pronounced effect of German colonization in Paraná, Santa Catarina and Rio Grande do Sul. The German geographers soon became fluent in Portuguese and published extensively in that language on Brazil.

Economic development and the regional problems of economic development, especially in Northeast Brazil, became major pre-occupations of Brazilian geographer reflecting Brazil's national concerns. Another focus, which was led largely by Pedro Geiger, was urbanization and industrialization. Brazilian geographers were intimately involved in the planning of the move of the capital from Rio de Janeiro to Brasilia in the late 1950s.

Applied geography has become an accepted part of the Brazilian reality. Even the research of foreign geographers such as my own on urban food supply methodologies has been incorporated and applied on a national scale. The frequency of scholarly conventions and symposia has steadily increased. Those devoted to the *Campo Cerrado* and to *Amazon Biota* in the 1960s were notable accomplishments.

Recent research has tended to follow topics of national concern; first Northeast Brazil in the 1950s (DNOCS and Banco do Nordesto do Brasil) and 1960s (SUDENE) and more recently the Amazon (SUDAM). New concepts of regionalization of Brazil and the application of quantitative methods to geographic problems and their applications to the development process have been especially promoted by Pedro Geiger and Speridiao Faissol. The most recent foci of attention have been urban planning and environmental problems.

## THE MAKING OF A BRAZILIANIST: A PERSONAL NOTE

My own involvement with Brazil was directly traceable to Preston James. As a Harvard undergraduate in geology, I had no idea of what the field of modern geography was, but I did have the opportunity to travel to the Arctic and tropical realms during summer vacations. After my freshman year, I hitchhiked to Alaska and was a hydraulic-giant operator in a large placer gold mine for ten weeks. I came to know the stinking million year old bones of Pleistocene hairy mammoths as we sluiced them out of the thawing permafrost; I marvelled at the work of

running water at the mine as well as the midnight sun. The next summer I sailed with the United States Weather Bureau on a weather station resupply mission to Thule, Greenland (77° North) and Resolute Bay (Cornwallis Island) in the Canadian Northwest Territories. I was enthralled by the Arctic and its silent fastnesses; I thought I wanted to be an "Arctic expert." The money earned by giving illustrated lectures during the following winter convinced me that I could finance a further adventure with a geology classmate driving his Model A Ford from Venezuela to Peru. My wonderment at the variety of altitudinal variations of vegetation and climate was punctuated by my culture shock and attraction to the Andean peoples, their language and their lives which were lived so close to the edge of subsistence.

A temporary five week job as field geologist with Cerro de Pasco at 14,000 feet elevation on the Peruvian *altiplano* convinced me that I was much more interested in the Quechua speaking Indians and their llama pack trains than with the mute and uninspiring-looking copper carbonate deposit we were prospecting. I had literally and figuratively moved out from beneath to above the earth's surface. At this point I began to think like a geographer and to worry about man/land relationships. I had seen enough first hand of latitudinal variety of landscapes in the Western Hemisphere to realize that there were significant differences from place to place which I wanted to understand more about.

Derwent Whittlesey steered me to Preston James at Syracuse during my senior year, and I was accepted as a graduate student despite having only one geography course on my transcript. I think James was interested in having me come to Syracuse because I had gone to his *alma mater* and also because I appeared to have a desire to experience diverse habitats, including Latin America. I shall never forget that day during my first year at Syracuse when James plunked himself down in my teaching assistant's cubicle and asked if I'd be interested in working in Brazil on my dissertation; he suggested that financial support before, during and after the field research would probably not be a great obstacle. I was speechless; I had never been to Brazil nor did I know anything about Brazil. I could not really think of any reason why I *should* concentrate my studies on Brazilian geography; on the other hand, I could not think of any reason why I should *not* focus on Brazil.

The closest I could get to Brazil during my first three years as a graduate student was an M. A. thesis comparing Thornthwaite's and Köppen's system of climatic classification of the notorious drought/calamity region of poverty stricken Northeast Brazil. My Brazilian classmates provided me with encouragement and excited my curiosity. James had encouraged several Brazilian geographers to come to Syracuse. Speridiao Faissol and Ney Strauch were graduate students in the 1953-1956 period; Palmyra Monteiro was an undergraduate Fulbright grantee from Belo Horizonte.

James, in contrast to some professors, was not one to impose his ideas of a dissertation topic. He felt that a student's dissertation was his own creation and that the student must invent and defend that topic because it is first and foremost *his* study. In my search for a good topic I questioned my Brazilian classmates. Both Faissol and Ney had interesting ideas, but it was Palmyra Monteiro's statement that her hometown of Belo Horizonte had serious problems of food supply that riveted my attention.

Practically nothing had been written on the subject on a scale which I could apply to Belo Horizonte. A consultant report by Klein and Saks had dealt with vague generalities, but no one had done actual field work with interviews on the subject. Why pick Belo Horizonte? It was a city of manageable size (500,000 people) that lay on the margin of concentrated settlement between the agriculturally productive *Zona da Mata* of Minas Gerais to the south and the sparsely populated *sertao* to the north. Moist climate and forest lay to the south, dry grasslands and savanna to the north.

Belo Horizonte was the hub of a primitive network of roads and railroads. It was also a relatively new city planned in 1897; it also had a guaranteed comfortable climate due to its elevation of 2,800 feet above sea level.

Despite my proposed research plan of attack, I soon had to adapt to local conditions. The comprehensive quantitative analysis of written records and vouchers of food shipments entering and leaving the city did not materialize. The figures in the *prefeitura's* office of market statistics did not reflect reality. At 6 a.m. I did not see anyone recording the sacks of rice and beans and manioc being unloaded at the Mercado Municipal. A qualitative approach had to be devised involving careful interviewing of all the wholesalers in the city regarding their sources of food commodities. Significant patterns of food flows emerged and pointed to the source regions and producers I should visit.

The name of Preston James opened the doors of all Brazilian geographers to me and by their own warm welcome I felt at home from the very beginning. There were some memorable field trips. At the time of the I. G. U. Congress, I went on a sixteen day excursion through Minas Gerais and Espirito Santo with about twenty geographers whose average age was twice mine. By some quirk of luck which has given me an ear for romance languages, I managed to learn enough Portuguese to do some limited interpretation. Mr. and Mrs. L. Dudley Stamp, Hans Boesch, Leo Peters and many other distinguished geographers barely managed to survive the interesting landscapes and gargantuan feasts which awaited us at frequent stops. Our Brazilian hosts at the Congress did a superb job and it was a marvelous way to become acquainted with one's future professional colleagues. It was convenient to present my paper at the climatology session held at the Escola Naval since many of us were given lodging and meals at the same Naval Academy located on an island right in the middle of Guanabara Bay with all of spectacular Rio de Janeiro surrounding us.

It was at the Congress and especially during the following year of 1956-57 that I came to know the geographers at the Conselho Nacional de Geografia. James had advised me to be sure to pay a call upon Fabio de Macedo Guimarras Soares who had been a founding figure in the Conselho but who was then residing at his apartment in Copacabana. It was good practice to keep in close professional and personal touch with those geographers who were both in power and out of power because the political fortunes changed and sooner or later the "outs" became "in."

In early 1957 I accompanied Ney Strauch and several other geographers in two trucks into northern Minas Gerais and southern Bahia. We visited Pirapora, Montes Claros and attempted to map the southern border of the *caatinga* vegetation. I remember how surprised I was when I learned that one woman geographer from Rio refused to eat the local cooking which I thought

was quite good. I learned how one approaches a potential rural informant: not with notebook in hand. One established an easy going rapport with informants on a basis of mutual friendliness and respect, not on the basis of a superior getting information from an inferior.

The ever present *cafezinho* was proffered at the humblest of abodes. We geographers were always talking shop among ourselves. The *piadas* or jokes were always there but so also was the serious talk which went on over our evening beers. Although many of my colleagues spoke English well, I insisted on speaking Portuguese and they were infinitely patient with my incessant questions. Questions about vocabulary, about slang, about the sociology and politics of Brazilian geography, about Brazilian domestic life, about race relations (Brazilians are bored by questions of skin color) and about Brazilian education. My brain ached after a day of talk in a bouncing vehicle; so did my backside.

It happened that the study of urban food supply was an ideal topic. Because I was studying a subject that touched everyone's life and the fact that something good might come from it, it afforded me the greatest degree of cooperation imaginable. The topic was truly a window onto Brazilian society. It dealt with food consumption preferences and taboos; with the food resource base (physical conditions of production); with transportation and storage; with marketing and distribution; with official intervention; and with the origins and antecedents of a food economy. I interviewed maids, British cattle buyers, grain wholesalers, chicken farmers, Japanese tomato growers, nutrition professors, truck drivers and owners, warehouse owners, tax accountants, highway planners, welfare administrators and many more.

I became friendly also with people outside of the topic. One journalist who knew of my work told Rubens Costa, who then (at age 28) was chief economist of the Banco do Nordeste do Brazil. Rubens appeared at my apartment one day and expressed interest in the research. He then asked if I would be interested in doing a study of Fortaleza's (Ceará) food supply and that he would provide three assistants and all the transportation and cartography needed. I figured that I could hasten the end of my Belo Horizonte work and this would allow me about eight weeks for the entire Fortaleza study.

Having learned where all the pitfalls and blind alleys were on the Belo Horizonte study, I plunged ahead. In ten days we did the first household food consumption sampling of 57 households, then the wholesalers, the visits to the source region and finally the distribution and marketing. I spent the last ten days writing the report which, with maps, was published as a 150 page monograph. This study was then used as a prototype for similar studies done on an even larger scale for six major cities of Northeast Brazil. It was an exhilarating year in which the field of geography had led me to so many rewarding and satisfying experiences. The fact that my major research in Brazil then and later has been published in Portuguese in Brazil is a major satisfaction to me. It has been my experience to feel much more accepted as a geographer in Brazil than in the United States. Preston James is undoubtedly one of the architects and builders of Brazilian geography by virtue of his extensive research and scholarship and personal activities there over many decades.

## THE VIEW AHEAD

A comprehensive review of all the geographical writings on Brazil based upon a continuing review of books and periodicals published worldwide is found in the leading annotated bibliography on Latin America, the *Handbook of Latin American Studies* which has just completed forty years of invaluable service to the serious student of Latin America.

As one who has followed the geographical writings about Brazil for over twenty years, I can state that the quantity and quality of research has increased at a tremendous rate. There is very little comparison between the scope and depth of studies published in Brazil before 1950 and those published during the last thirty years. Of course in the old days there were few data available; now there is a flood of information.

North American research on Brazilian geography received its greatest stimulus from the combination of federal money and foundation support for foreign area studies in the period from 1955 to 1970. In the perennial tides of intellectual fashion some people have subsequently asserted that regional studies are dead. However, as long as there are specific problems associated with particular areas on the earth's surface, the solutions to those problems will also be regional in character. Preston James and a handful of other American geographers were doing studies on Latin America long before the cornucopia of research funding opened in the post-*sputnik* era. The hard-core scholars are tenacious and continue with their obsessions regardless of funding. The inherent value of a research topic should never be confused with how much money available for its study, although sometimes there is a correlation.

James spent several months in early 1950 travelling with Ney Strauch and Antonio Teixeira Guerra through the backlands of Northeast Brazil. The area made a strong impact upon James as the prototype of a poverty area which had been blamed on periodic droughts, but in fact was due to social, economic and historical factors. The Northeast has the dubious distinction of being the largest developing area of the largest developing nation in the Western hemisphere. Despite the hardship of travel and field work there, the Northeast still remains the richest area for geographic research due to the sharp gradients within the physical habitat, but also the striking contrasts of the economic, social and historical fabrics. James published two seminal articles on the Northeast in 1952 and 1953 that preceded a flood of scholarly interest in that problem region by others in subsequent years.

In the long and prolific career of Preston James, Brazil has occupied the prime time from roughly 1930 to 1960 as evidenced by his published articles specifically focused on Brazil. What his bibliography does not reveal explicitly is that his ideas about the broader concepts and concerns of man and his habitats have been undoubtedly influenced by his Brazilian experiences. To be somewhat colloquial, Brazil is a "can-do" country and the Brazilians are a "can-do" people. Practically nothing is out of the realm of possibility to a Brazilian. Preston James is also a "can-do" person. Pessimism is most definitely not a part of his personality. To recognize the success of his career one must *not* assume that it was an easy process. In the face of the inevitable rejections, disappointments and obstacles, he always bounced back with renewed zeal and determination to spread the gospel of modern geography.

In the years after 1960 James broadened the scope of his writings to the more general consideration of the history of geographic thought, to education on all levels and to a deep

concern about the future of the world and its people. But the problems of the world's people were always directly and personally felt; he had the ability to identify with the situations in remote cultures and places and the instinct to propose analyses of, and solutions to, such problems.

It is apparent that between now and the year 2000 A.D. a reactivation of the geographers' world perception is crucial to the economic and environmental survival of individual nations and of the world generally. Man's dominance over the delicate balances of nature over the past two hundred years has been the triumph of the scientific age. Now we must all stand back from our narrowing specialties and, like Preston James, see the world as a whole where our collective destinies lie in the rigorous quest for truth and in difficult and courageous decisions which must be taken by nations collectively in order to preserve the world's environment and husband its resources for all peoples.

#### Notes

- 1. C. G. Manizer, A Expedição do Academico G. I. Langsdorff ao Brasil (1821-1828). Posthoumus edition organized by B. G. XPruinson. Translated by Osvaldo Peralva. Companhia Editora Nacional São Paulo, Brasiliana, Vol. 329, 1967. Original Russian title: Edspeditsiia Akademika G. I. Langsdorff V'Brazillia.
- 2. C. G. Manizer, A Expedição do Academico G. I. Langsdorff ao Brasil (1821-1828), 47.
- 3. James to Isaiah Bowman, 5 August 1921. From personal collection of Geoffrey Martin.
- 4. Hilgard O'Reilly Sternberg, The Status of Geography in Brazil. The Professional Geographer 3:23-29.