This National Conference of Latin Americanist Geographers brings together most of those geographers who are currently contributing to Latin American studies. The committee which planned the conference identified four major objectives:

1) To review the record of geographical study in Latin America, and to offer a critical appraisal of what has been accomplished;

2) To evaluate current research in relation to the professionally accepted paradigm defining the conceptual structure, the scope, and the methods of geographical study;

3) To identify neglected fields in which major problems exist which need to be examined by geographical methods in the years ahead;

4) To discuss the contribution of geography to interdisciplinary programs.

The purpose of this introductory paper is to place the current studies of Latin America in the perspective of what has been done before. This previous experience with the study of Latin American problems is part of our heritage which should be understood in part to reduce the persistence of old error, and in part to pay tribute to those who have created the discipline within which we work. The pioneer studies of Latin America should not be judged in terms of the needs and understandings of today, but rather in the context of their time and in relation to what had been done before. The scholar who formulates a hypothesis which proves untenable should not be belittled for his lack of acumen: rather he should be honored for having taken one of those essential steps on which any field of learning must be based. For any hypothesis clearly and vigorously stated results in new observation, new processes of analysis and eventually in the formulation of new and more illuminating concepts. To quote Peter Haggett's remark, "the sound of progress is perhaps the sound of plummeting hypotheses" (Haggett, 1966: 277).

The study of Latin America by geographers from the United States can be said to have started during the first decade of the twentieth century. To be sure Louis
Agassiz was in the Amazon region in 1865; William Morris Davis was observing the weather at Cordoba (Argentina) from 1870 to 1873 and Mark Jefferson held a similar position from 1883 to 1887, after while he spent two or more years in Argentina as assistant manager and treasurer of a sugar cane plantation near Tucumán. From 1905 to 1907 George M. McBride was living in Santiago, Chile, where he was the director of the English Language Institute; and from 1907 to 1915 he lived in La Paz, Bolivia, as director of the American Institute. During this time he was not carrying out actual field studies, but he was storing up observation about the land and people which he used later in his studies of Chile and Bolivia.

**Isaiah Bowman and the American Geographical Society**

Specific geographical studies began when Isaiah Bowman directed the Yale South American Expedition of 1907. This was the first of three field seasons in which Bowman worked on the Andes of Peru, and the borderlands of Bolivia, Argentina, and Chile. In 1911 he was the geographer and geologist on the Yale Peruvian Expedition which was headed by Hiram Bingham – on which expedition Bingham rediscovered the lost Inca ruins at Machu Picchu. In 1913 Bowman received a grant from the American Geographical Society for a third expedition to Peru. The results were published in the book *The Andes of Southern Peru* (Bowman, 1916).

What was Bowman trying to do in the Peruvian Andes? Here is what he has to say about the 1911 expedition:

"The geographic work of the Yale Peruvian Expedition of 1911 was essentially a reconnaissance of the Peruvian Andes along the 73rd meridian. The route led from the tropical plains of the lower Urubamba southward over lofty snow-covered passes to the desert coast at Camaná. The strong climatic and topographic contrasts and the varied human life which the region contains are of geographic interest chiefly because they present so many and such clear cases of environmental control within short distances."

..... “My division of the Expedition undertook to make a contour map of the two-hundred mile stretch of mountain country between Abancay and the Pacific Coast....” (Bowman, 1916: vii).

We do not need to throw out Bowman's work because of his reference to
"environmental controls." This was a part of the geographic paradigm in 1916. But what else was he trying to do? It is clear that out of the mass of specific detailed observations that were made he was trying to arrive at some kind of useful generalization that would communicate to others the characteristic associations of people and land in the Peruvian Andes. Bowman's imaginative innovation in this study was his use of the "regional diagram." He recognized in the high Andes six kinds of what he called "topographic types:"

1) An extensive system of high-level, well-graded, mature slopes (around 15,000 feet in altitude), below which are:

2) Deep canyons with steep, in places, cliffed sides and narrow floors, and above which are:

3) Lofty residual mountains composed of resistant, highly-deformed rock, now sculptured into a maze of serrate ridges and sharp commanding peaks.

4) Among the forms of high importance, yet causally unrelated to the other closely associated types, are the volcanic cones and plateaus of the western Cordillera.

5) At the valley heads are a full complement of glacial features, such as cirques, hanging valleys, reversed slopes, terminal moraines, and valley trains.

6) Finally there is in all the valley bottoms a deep alluvial fill formed during the glacial period and now in process of dissection (Bowman, 1916: 185-186).

The actual topographic maps show all these features in their complex arrangement and with the many variations that make each view unique. The regional diagram, on the other hand, shows these various types in the characteristic arrangement, simplified and compressed within small rectangles. "This compression, though great, respects all essential relations For example, every location on these diagrams has a concrete illustration but the accidental relations of the field have been omitted the essential relations are preserved. Each diagram is, therefore, a kind of generalized type map" (Bowman, 1916: 51).

After Bowman became the director of the American Geographical Society in 1916 several events contributed to the further development of Latin American studies. During World War I Bowman worked on The Inquiry, a group of scholars from a
Bowman's work in Peru, Bolivia, and Chile, as well as his experiences in the Guatemala-Honduras dispute, made it clear to him that there was a very real need for the preparation of a reliable map of Latin America. With the methods of surveying then in use it would have taken many decades to carry out the surveys in the field. But Bowman realized that there were numerous original surveys in manuscript form that had been done by private companies for a variety of purposes. He proposed to the Council of the American Geographical Society that the Society should undertake a major research program leading to the compilation of a map of Hispanic America on a scale of 1:1,000,000 conforming to the standards of the International Map of the World (Wright, 1952: 300-319; R. R. Platt, 1927). Raye R. Platt, reviewing the completion of the Millionth Map Project in 1946, quoted the annual report of the Council for 1920 as follows:

"The first step in the development of this program aims at the review and classification of all available scientific data of a geographical nature that pertains to Hispanic America....... The work will involve the compilation of maps – topographic and distributional -- on various scales; but always including sheets on the scale of 1:1,000,000 which will conform to the scheme of the International Map..... The undertaking is an ambitious one, but the Society is happy to say that assurances of cooperation have been given by the whole group of Hispanic American countries in a cordial spirit that augurs well not only for immediate scientific results but also for the fostering of mutual understanding and sympathetic relations towards which the field of geography offers a peculiarly fortunate approach" (R. R. Platt, 1946:2).
As part of the Map of Hispanic America project, the Society supported the publication of a series of research studies. Some were based on a actual field study, such as the reports of European colonization in Chile, Argentina, and Brazil by Mark Jefferson (Jefferson, 1921a, 1921b, 1926a, 1926b), or the studies of land settlement problems in Chile, Bolivia, and Mexico by George M. McBride (McBride, 1921, 1923, and 1936), or the studies of Peruvian highways by McBride and his son (McBride and McBride, 1944). Other research studies were compiled in New York from the drawings of the Millionth Map supplemented by Bowman's copious notes and other documentary materials in the Society's library (Wrigley, 1916; Ogilvie, 1922).

**Bailey Willis and Wellington D. Jones**

In 1902, when Argentina's claim to Patagonia was confirmed by arbitration with Chile, carried out by Thomas Holdich for the King of England, the Argentine government started construction of several railroads running inland from the Atlantic coast. One of these started at the port of San Antonio and was to extend up the valley of the Río Negro to Neuquen and eventually to Lake Nahuel Huapí. The Argentines were well aware of the experience of the United States when surveys had preceded the construction of the transcontinental railroads. They appealed, therefore, to the United States Geological Survey for help in carrying out a study of the water resources and other potentialities of the northern part of Patagonia. The Geological Survey assigned the Stanford geologist Bailey Willis to the task of organizing and operating such a survey, which became known as the Comisión de Estudios Hidrológicos. The Comisión was set up in January 1911, and the final report was completed in 1914.

It happened that Bailey Willis had served as a visiting professor with T. C. Chamberlin and Rollin D. Salisbury at Chicago, which, at this time, had the only separate department of geography for graduate study in the United States. Naturally Willis turned to Salisbury to recommend a young man trained in economic geography to work on the survey. The young man selected by Salisbury was Wellington D. Jones, then a graduate student. During the 1912 field season the expedition surveyed a strip of territory along the Andes for some ninety miles north and south of Lake Nahuel Huapí. Jones surveyed the area north of the lake (Willis, 1914: 290-291).

The surveys were carried out at a scale of 1:200,000, and included six categories of
existing and potential use:

1) Potential and actual agricultural land
2) Forest land (virgin forest)
3) Brushy growth which either marks old burns or occupies the transition zone along the lower mountain slopes
4) Recent burns (which were extensive south of Lake Nahuel Huapí
5) Grass-covered foothills and adjacent plateaus to the east, suitable only for the grazing of cattle or sheep
6) Alpine pastures and barren mountain slopes over 1,500 meters in altitude.

The conclusion was reached that the chief use of the land would be for raising high-grade beef or dairy cattle, and that crops could not occupy any large areas. In certain of the lower valleys descending from the Andes fruit could be raised without irrigation, but in most places irrigation would be necessary. Large areas of forest would have to be preserved on the watersheds to maintain the supply of water for irrigation and for hydroelectric power.

It was this experience in Patagonia that inspired Wellington, together with his fellow graduate student at Chicago, Carl Sauer, to suggest the importance of detailed field mapping of agricultural areas, the first time it was suggested that maps of land use should be prepared at the same scale and degree of detail as the maps of land types or soils (Jones and Sauer, 1915).

Studies by Individual Geographers

After World War I there were a few geographers in the United States who began to focus their attention on Latin American problems. In addition to Bowman, McBride, and Jefferson -- who were associated with the American Geographical Society Map of Hispanic America program – there were individuals who returned repeatedly to Latin America starting in the 1920s. These four were Carl O. Sauer, Robert S. Platt, Clarence F. Jones, and the writer of this paper. It may be appropriate here to characterize the contributions of these early area specialists.

Carl Sauer made Latin America the focus of his field studies after became a member of the faculty at Berkeley in 1923. With his graduate students he worked chiefly in the northwestern part of Mexico. His first publication in this field was with Peveril Meigs in 1927 (Sauer and Meigs, 1927). Sauer's approach to geographical studies in Mexico was quite different from his earlier attention to the practical
problems of land classification (in Michigan). Influenced by his California colleagues in history and anthropology he focused on the evidence in the cultural land of the course of human settlement. He was interested in how man changed the face of the earth, whether intentionally or unintentionally. For culture history made a sequential impact on the physical earth and its cover of plants, and the task of deciphering this sequence captured his imagination (Sauer, 1941). One of his early works along these lines constructed the course of the road connecting Central Mexico with the Pacific Northwest and California (Sauer, 1932). To be sure the historian took him to task in this study for making use of secondary sources; but his contribution went beyond anything the historians could have done primary sources, when he reconstructed the position of the road on the basis of field observation. He and his students did much with prehistoric Indian settlements, which led him later to generalize about early man America, and about the origins and dispersal of agriculture.  

Robert S. Platt started his higher education as a major in philosophy and history at Yale. After graduating in 1914 he accepted a teaching post in China, and one of the subjects he was asked to teach was geography. In China he discovered an abiding interest in people and places, but not until his return to the United States in 1915 did he discover that the field in which he had found an interest was called geography. At age 25 he started graduate work at Chicago and completed his Ph.D. in 1920. Here is what he had to say about what it was that attracted him to the study of geography:

"... in comparison with my philosophy major, geography offered the advantage of dealing with tangible and visible things forming a solid basis on which to build ideas, instead of beginning and ending with abstractions. In comparison with my history minor, geography had the advantage of going more into the field for direct observation instead of going to the library to read about things no longer visible. In comparison with geology, geography had the appeal of dealing with the world of people instead of only rocks and fossils" (Hartshorne, 1964: 631).

In his first field study in the Antilles in 1922 he realized the inadequacy of the theme of environmental controls, and thereafter he became one of the most effective spokesmen for those who abandoned the concept of environmental determinism. In a study of a small Wisconsin community in 1928 he was the first American geographer to discuss the functional organization of earth space (Platt, 1928). Each of his papers after 1928 made use of a small unit of human
occupance to illustrate the application of a method (Platt, 1931, 1932, 1933, 1934, 1935, 1936, 1938a, 1938b, 1939, 1949). Those who did not follow his writings, and especially his papers presented to the annual meetings of the Association, sometimes failed to see the broader patterns of ideas that his details were intended to build. When he was accused of describing only unique things and having nothing to do with the construction of general concepts this revealed a common difficulty among scholars: a failure to read or listen carefully. His book (Platt, 1942) placed a selection of his many detailed studies into the perspective of larger themes. The ideas with which he came to grips were actually too complex to be thoroughly analyzed before the age of the computer. If Platt were alive today he would be a leader in the use of spatial systems theory -- for this is what he had been writing about for forty years.

One example of his penetrating attacks on the concept of environmental controls can be used to illustrate this aspect of his work. In 1930 he began to experiment with the observation of settlement patterns from the air. On an air traverse of Central America he prepared a strip map distinguishing five categories: 1) urban settlement; 2) rural settlement that completely covers the ground; 3) dense, but not complete, rural settlement; 4) sparse rural settlement; and 5) empty areas (Platt, 1934:31). Before that time it was common to find geographers explaining the division of this part of Latin America into six small states as the result of the difficulties of travel through rugged, mountainous terrain. But Platt demonstrated that the political boundaries between countries were not drawn along mountain ranges, and that the boundaries did pass through areas of sparse settlement or entirely empty areas separating the densely settled cores. The sparsely settled areas were not related to especially rugged terrain. Amazingly, not many geographers took notice of this important revision of the deductions from the concept of environmental control.

Clarence F. Jones began his studies of Latin America in 1925, and continued to work in the field at intervals until his retirement in 1961. Among his many important contributions to the understanding of Latin American problems perhaps the outstanding one had to do with the survey of Puerto Rico carried out between 1949 and 1952. This was one of the conspicuous examples of the application of geographic methods to an inventory of land resources and land uses as a basis for planning economic development.

In 1949 Rafael Picó (who holds the Ph.D. from Clark University in geography) then chairman of the Puerto Rico Planning Board, invited the Department of
Geography of Northwestern University to undertake the job of making a land use map of Puerto Rico on a scale of 1:10,000. G. Donald Hudson, chairman of the department, and Clarence F. Jones went to Puerto Rico to work out details of the contract with Picó. The pilot survey -- a strip across the island on which to experiment with the categories to be identified -- was carried out in the summer of 1949 under the direction of Jones. The survey of the island was done by teams, each consisting of an advanced graduate student in geography from the United States and a Puerto Rican student. The whole island was mapped between July 1949 and August 1951. Using a fractional code system of notation on vertical air photo graphs, the teams identified eight categories of land use (in the numerator) and the characteristics of the physical land (in the denominator) including soil types, degree of slope, conditions of drainage, rate of erosion, amount of stoniness, and rock exposure.

The maps of the Puerto Rico Rural Land Classification Program proved to be of inestimable value. On the basis of the information about the physical character of the land and the existing land use, plans were drawn up for the improvement of agriculture, for the establishment of a number of small manufacturing plants, and for the routes to be followed by new highways. The cost of the survey was more than covered by the money saved in the process of economic development programs (Jones and Berrios, 1956).

The writer's studies in Latin America cover a wide range of topical fields. Mostly, but not exclusively, concentrated in Brazil, he has written on geomorphology, climatology, population and settlement, economic development, urban problems, and problems of political geography.

The observed conditions in Latin America are illuminated by placing the in historical perspective -- by tracing their changes through time. These papers illustrate both the advantages and the limitations of this approach (James, 1932, 1933, 1953). Nevertheless the writer has not entirely neglected the formulation of hypotheses and models. 5

**Interdisciplinary Programs**

Geographers have participated in a number of interdisciplinary programs of Latin American study. one of the earliest was an informal collaboration among members of the faculty at the University of California at Berkeley. Here Carl Sauer found congenial supporters -- H. E. Bolton, historian, and A. L. Kroeber,
anthropologist. Three outstanding scholars with different backgrounds and approaches came together on the study of Latin America. The combination proved to be enormously stimulating to the participants, and also to the many graduate students who worked with them. In 1932 a new collection of monographic studies known as *Ibero-Americana* was started. It was planned to include substantial contributions to the understanding of Latin American cultures, native and transplanted, pre-European, colonial, and modern. Studies of physical and racial backgrounds were to be included, but it was anticipated that more of the monographs would be contributions to culture history. The first of the monographs was written by Sauer and Donald Brand, dealing with pre-historic Mexican frontier on the Pacific coast (Sauer and Brand, 1932).

In the 1930s several efforts were made to bring scholars from different disciplines together for the study of Latin America. One of the most successful of these efforts was started by Prof. Max S. Handman, sociologist at the University of Michigan. Handman was able to get funds from the Social Science Research Council to hold a preliminary meeting of Latin Americanists in the Middle West. The meeting, incidentally, was held in a cottage on the Indiana Dunes owned by Robert S. Platt. The meeting included geographers (James and Platt), economists, anthropologists, sociologists, and students of Latin American literature. A conference some thirty scholars in a wide variety of fields met at the Social Science Research Council offices in New York in 1934. From this meeting came annual *Handbook of Latin American Studies*, edited at first by the historian Lewis Hanke, and published by Harvard University Press. It includes selection of the most important publications in all fields dealing with Latin America. The Social Science Research Council and the American Council of Learned Societies also gave support for a series of summer institutes in which special workshops, lecture programs, and exhibits were organized to increase the understanding of Latin American problems. The first such institute was held at the University of Michigan in the summer of 1939, and included musical programs and art exhibits as well as panel discussions of economic, social, and political problems. A second institute was held in the summer of 1940 at the University of Texas. Thereafter the institute program became a war casualty.

Interdisciplinary programs contributed to the war effort. In many ways the agencies that were organized to consider and advise on policy questions during the war brought home to scholars in many fields that the best, if not the only, way to attack such questions was by teams made up of representatives of different
disciplines. In the rush of demobilization after the war the experience gained was largely forgotten, at least for a time, and only more than a decade later did it become common to attack major problems with interdisciplinary teams.

In this new era of the electronic computer and remote sensing the problems are much too big to be effectively handled by single disciplines. As Kenneth Hare points out, there is need for a new kind of discipline which approaches policy questions through synthesis rather than analysis. He writes:

"I suggest that the past century was the era in which we achieved great things by dissecting reality so that we could look at its fine texture; and that is how most of our existing disciplines got going. The next century will be that in which we learn to cope intellectually with complexes of things, and especially with those that make up the environment of man." (Hare, 1970: 353).

But is that not precisely what geographers have been trying to do for generations – the study of man in his environmental setting? For the first time this becomes possible through the use of electronics and other aids to the collection, storage, and manipulation of data, and through the formulation of procedures for handling systems of interconnected elements. There is a brilliant sunrise ahead for those who can bear to look at it.

NOTES


2. Geographers who took major parts in the mapping program, including the field survey of areas not otherwise covered, included O. M. Miller, Robert Shippee, and Charles B. Hitchcock (Miller, 1929; Shippee, 1932, Hitchcock, 1947, 1954.)

3. C. O. Sauer, after his appointment at Berkeley in 1923, turned his attention to Mexico. During the late 1920's and the 1930's he led field parties into Mexico almost every year for periods ranging from a few weeks to several months. Most of his graduate students wrote dissertations on Mexican problems. Robert S. Platt was in the field in Latin America for periods ranging from several months to a


5. In the study of Trinidad in 1924 he correlated the size of coconut with the rainfall of the year before (coefficient of .733, probable error of ±.072 - James, 1926: 117). He hypothesized that each n form of land use would be located first in the place most accessible to the chief port, that it would then spread all over the island, finally would retreat to the area most favorable in terms of physical conditions (James, 1927: 108-109). Some 25 years later he tested validity of the hypothesis by looking again at Trinidad, and found that some of his forecasts came true while others did not (James, 1957). His book interprets observed contemporary conditions and problems in Latin America as the result of the spread of innovation from source regions along lines of maximum accessibility (James, 1942, 1969).

6. James J. Parson's monograph on Antioqueño Colonization in Western Colombia was number 32 in the series (1949). In 1968 the 50th monograph was published.

7. The Handbook, now in its 34th year, is edited by Howard Cline at Hispanic Foundation of the Library of Congress, and published by University of Florida Press.

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