money invested, not money spent. Precisely because the National Research Council has sought through its fellowships to find and train investigators and teachers, and through its research programs sought to give research opportunities to competent workers we are here to-day to thank its members and offer the tribute of admiration and respect. The most essential need of fundamental research in medical sciences is men—men of attainment and men of promise still to be fulfilled. They can't live without salaries, they can't work without laboratories, they can't teach without pupils who want to join the ranks. Their curiosities are not to see how much they can take from society in money or prestige. They want to understand the fundamental facts of living tissues and living organisms and human relationships. They have their disappointments, their difficulties, their tragedies. They are human. Medical research is an abstraction—the realities are men who search and search again for causes and the relation between phenomena. Until we are prepared in this country to understand the motives, the needs, the rewards, in short the lives of research men we shall go our floundering, hit-or-miss, good-naturedly uncomprehending way, wasteful of these human resources, negligent of our opportunities and happily ignorant of our failures to meet the essential need of fundamental research—the finding, training and support of first-rate scientific brains. One- and two-year grants won't suffice. Medals and citations aren't enough. Time for long study and money for apparatus and helpers and the chance of steady employment—these are what first-rate men need and too rarely get from the society they could shower with the blessings of freedom from pain, relief from disability and the knowledge by which human life is not merely prolonged but rendered happy, freed from fear and ignorance. If you think I exaggerate reflect upon the contributions described this afternoon in the fields of anesthesia, bacteriology, nutrition, physiology and virus diseases.

Created during the first World War, the National Research Council under the auspices of the National Academy of Sciences continued in ensuing years the work of fostering and directing research work in this country. It will resume after this war its work in the service of science and of society. I could hope that in increasing measure the lay public will recognize how valuable are its potentialities, how ready and well qualified it is to administer funds for research work in peacetime and how useful could be its services to society.

Dr. Harrison, you represent the National Research Council not only by your own extraordinary gifts as an investigator, your long services as a counselor and teacher and the example of a splendid character, you also are the designated representative of the National Research Council to receive the tribute offered here to-day to the gifts, the services and the example of the scientists of America in behalf of the public health. I trust that this occasion will aid in a better understanding of the importance of fundamental research in the medical sciences and serve as a warm acknowledgement of the debt of society to the faith which has created and maintained the National Research Council.

THE STATUS AND PROBLEMS OF RESEARCH IN THE NATIVE LANGUAGES OF SOUTH AMERICA[1]

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EVEN a relatively short sketch of the linguistic conditions of a large area should cover such points as: general features—phonetic, morphological and lexical—that characterize the languages, and the main points in which they differ from languages of other regions; brief digests of the grammar and phonetics of each independent family or at least of the more important ones; a classification of these families in groups according to phonetic and morphological type; a classification of the component languages of each family in their proper subdivisions as dialects, languages, groups and stocks, according to degree of linguistic relationship; and a reconstruction of linguistic history and migrations. As regards the aboriginal languages of South America it must be understood at the outset that, as comparatively little reliable data are available upon them, none of the above points can be treated with any approach to thoroughness, and on most of them little can be said at present.

South American Indian languages have no uniform or even usual characteristics that differentiate them from North American languages. The same may be said of American languages fundamentally, as opposed to Old World languages. Languages were formerly grouped into categories according to morphological

[1] Vice-presidential address of the incoming chairman of the Section on Anthropology, American Association for the Advancement of Science, Cleveland, September 15, 1944. This address was prepared as the introduction to the linguistic section of the Handbook of South American Indians to be published by the Bureau of American Ethnology of the Smithsonian Institution, and is here printed with the permission of that institution.

pattern: isolating, agglutinating, polysynthetic and inflective, with an implication of evolution and betterment toward the inflecting ideal—of course of our own Indo-European languages. However, research has shown that, so far as there has been any evolution, the isolating is the last, not the first stage. American languages were once classed with the polysynthetic, with agglutinative tendencies. No such hard-and-fast distinctions can be made; few languages belong definitely to one or another class, and most of them show traits of several classes. This applies equally well to American and to Old World languages; some show tendencies towards inflection, more towards polysynthesis. It is impossible to give any description that would characterize the majority of American Indian languages or contrast them with Old World languages, either from a morphological or a phonetic point of view. Incorporation (of the nominal or pronominal object) was formerly considered one of the characteristics of American languages; this also is missing in many of them.

A classification of languages according to patterns and types being impossible, the only possible one is genetic, based on relationship, common origin and linguistic history.[2]

The classification of human groups according to their languages is now accepted as the best system for reconstructing historical connections. Cultural elements are too easily adopted to have much historical value; somatological characteristics, though more permanent than linguistic ones, are less readily identifiable in mixture. On the other hand, a proved relationship of two languages at present widely separated indicates a former close connection or identity of the ancestors of their speakers and thus affords important data on human migration. But proof of linguistic relationship is fraught with innumerable difficulties. It is seldom absolute, but depends on acceptance by scholars; on the other hand, it is impossible to prove that two languages are not related.

Merely to ascertain the connection between two languages is far from sufficient to establish a good historical picture. If we knew no more than that Spanish, Italian, German and Russian are related it would mean little. All the languages of South America may be related; all those of all America may be; conceivably all languages in the world may eventually be proved to have a common descent. In the same sense, all mammals are related, all animals are related, all life had a common origin. Relationship means little unless we know degree and nearness of relationship.

A direct comparison of two distantly related languages seldom yields convincing proof of their connection. A comparison of Polish and English would probably result in a negative decision; it is only because we know the historical linguistics of the Indo-European languages well, with reconstructed roots of words, that the relationship can be proved. On the other hand, no proof would be needed of the relationship of French, Spanish and Italian; even if we did not know their descent from Latin, the resemblance is obvious. The relationship of dialects such as Catalan, Provençal and Gallego is even closer and more evident.

Related languages are grouped in "families" or "stocks," presumed, on present evidence, to be unrelated. These families are then subdivided into divisions, groups, branches, languages, types, dialects, varieties, etc. The terminology is indefinite and there are no established criteria. When families heretofore considered independent are determined to be related, a more inclusive term is required; phylum has been accepted. For instance, if Indo-European, Hamito-Semitic and Finno-Ugrian are "proved" to be related, as has been posited with considerable ground, they would compose a phylum. Most of the eighty-five-odd "families" of North America, formerly considered independent, are now grouped in relatively few phyla.

Good scientific grammars of South American languages are practically non-existent, and grammars of any kind, even of the older type based on analogy with Latin grammar, are very few. Comparisons of morphology, one of the important criteria for linguistic connections, are therefore in most cases impossible. Most of the classifications are based on lexical grounds, on vocabularies, often short, taken by travelers or missionary priests, and generally with the help of interpreters. The recorders were untrained in phonetics and each used the phonetic system of his native language, Spanish, Portuguese, French, German, English, sometimes Dutch or Swedish. Scientific deductions made on the basis of such material have little claim to acceptance. Yet on many languages, extinct or living, nothing else is available. An independent family should not be posited on the basis of one such vocabulary, no matter how apparently different from any other language (*cf.* Masubi).

Of many extinct languages, and even of some living ones, nothing is known; of others there are statements that the natives spoke a language of their own, different from that of their neighbors, but without any suggestion as to how different, or that the language was intelligible or unintelligible or related to that of other groups. Of some, only place and personal

[2] On the classification of languages, and of American Indian languages in particular, see Boas, Introduction to *Handbook of American Indian Languages*, 1911; Harry Hoijer, "Methods in the Classification of American Indian Languages" in "Language, Culture and Personality; Essays in Memory of Edward Sapir," Menasha, 1941, 3–14; J. Alden Mason, "The Native Languages of Middle America" in "The Maya and their Neighbors," New York, 1940, 52–87; C. F. Voegelin, "North American Indian Languages Still Spoken, and their Genetic Relationships" in "Language, Culture and Personality," 15–40; and references and bibliographies therein.

names remain; of others, recorded lexical data ranging from a few words to large vocabularies and grammatical sketches.

Owing to the magnitude of the field it has been possible for me to make very few independent studies and comparisons of lexical and morphological data with a view to establishing linguistic connections, and even most of the articles published by others in support of such relationships have not been critically studied and appraised. The greater number, and by far the most cogent, of these studies have been written by the dean of South American linguists, Dr. Paul Rivet. Similar studies in Macro-Ge languages have been published by Loukotka. In almost all of them the authors were, unfortunately, limited to comparing vocabularies collected by others and pregnant with the faults already herein set forth. Words from lists in one group of languages are compared with words from languages of another group. Rarely are the roots or stems isolated or known, and morphological elements may often be mistaken for parts of stems. Rarely has it been possible to deduce any rules of sound-shift, the best proof of linguistic relationship, or the examples given are too few in proportion to the number of comparisons to carry conviction. Few if any of these proposed linguistic relationships can be said to be incontrovertibly proved; good cases have been made for many, and many or most of them have been accepted by later authorities. Others are of doubtful validity, and all require reappraisal, and reworking, especially those in which new data may later become, or may already have become, available.

It is a truism of linguistic research that, given large enough vocabularies to compare, and making allowances for all possible changes in the form of a word or stem, as well as in its meaning, a large number of apparent similarities, convincing to the uncritical, can be found between any two languages.[3] Especially is this true if the comparison is made between two large groups, each consisting of languages of admitted relationship. To carry conviction, laws of sound-shift must be deduced, obeyed by a large proportion of the cases in question, and a basic similarity in morphological and phonetic pattern must be shown. Few of the comparative works on South American languages attempt such obligations, and almost all suffer from the faults above listed. There is not a real comparative grammar of any South American, or for that matter of any American, native linguistic family, except possibly Algonkian.

One of the pitfalls to be avoided in linguistic comparison is that of borrowing. Languages easily adopt words from neighboring languages; these must be discounted in seeking evidence on genetic relationship. Words for new concepts or new objects are likely to be similar in many languages[4]; generally their categories and very similar forms betray their recent origin. Phonetic pattern and morphological traits are also borrowed, but to a lesser degree. Grammatical pattern is the most stable element in a language, phonology next; vocabulary is most subject to change. There are several areas in America where a number of languages with little or no lexical resemblance have a relatively uniform phonology, and/or similar morphological peculiarities.

Many American languages, North as well as South, show resemblance in the pronominal system, often *n* for the first person, *m* or *p* for second person. Whether this is the result of common origin, chance or borrowing has never been proved, but the resemblance should not be used as evidence of genetic connection between any two languages. Many of the languages of central and eastern Brazil are characterized by words ending in vowels, with the stress accent on the ultimate syllable.

In some cases, the amount of borrowed words and elements may be so great as practically to constitute a mixed language. Linguistic students are in disagreement as to whether a true mixed language with multiple origins is possible. Loukotka, in his 1935 classification,[5] considers a language mixed if the foreign elements exceed one fifth of the forty-five-word standard vocabulary used by him for comparison. Lesser borrowings he terms "intrusions" and "vestiges."

The situation is further complicated by the fact that, in a large number of instances, the same or a very similar name was applied by colonists to several groups of very different linguistic affinities. This may be a descriptive name of European derivation, such as Orejón, "Big Ears"; Patagón, "Big Feet"; Coroado, "Crowned" or "Tonsured"; Barbados, "Bearded"; Lengua, "Tongue." Or it may be an Indian word applied to several different groups in the same way that the Mayan Lacandón of Chiapas are locally

[3] As a few examples, which really should not be mentioned in the same context as Rivet's work, see Miles Poindexter, "The Ayar Incas," 1930, "proving" a connection between Kechua and Sanskrit and other "Aryan languages"; T. S. Dennison, "Mexican Linguistics, including Nauatl or Mexican, in Aryan Phonology," etc., which does the same for Aztec; Julio Salas, "Orígenes americanos; lenguas indias comparadas," Caracas, 1924, wherein connections are seen between all American languages and European ones, based on such analogies as Hecate—Ehecatl, Apollo—Ollin, etc.

[4] See Erland Nordenskiöld, "Deductions Suggested by the Geographical Distribution of Some Post-Columbian Words Used by the Indians of South America," in "Comparative Ethnographical Studies 5," Göteborg, 1922. Also George Herzog, "Culture Change and Language: Shifts in the Pima Vocabulary," in "Language, Culture and Personality," Menasha, 1941, 66–74. Such words as those for banana, cow, telegraph, are pertinent.

[5] Cestmir Loukotka, "Clasificación de las lenguas sudamericanas," Prague, 1935. See also Loukotka, "Linguas indigenas do Brazil," in *Revista do Arquivo Municipal*, LIV, 147–174, Sao Paulo, 1939.

called "Caribs," and the rustic natives of Puerto Rico and Cuba "Gíbaros" and "Goajiros," respectively. Thus, "Tapuya," the Tupi word for "enemy," was applied by them to almost all non-Tupi groups, "Botocudo" to wearers of large lip-plugs, etc. Among other names applied to groups of different languages, sometimes with slight variations, are Apiaca, Arara, Caripuna, Chavante, Guana, Guayana, Canamari, Caraya, Catawishi, Catukina, Cuniba, Jivaro, Macu, Tapiete, not to mention such easily confused names as Tucano, Tacana and Ticuna. Many mistakes have been made due to confusion of such names (*cf.* especially, Arda).

America, and especially South America, is probably the region of greatest linguistic diversity in the world, and of greatest ignorance concerning the native languages. On the very probable presumption that each homogeneous group, tribe, band or village, spoke a recognizable variant dialect or variety, there may have been five thousand such in South America. The index of Rivet (1924) lists some 1,240 such groups (including a few synonyms), and this is far from the total. For instance, in the above index, Rivet lists thirteen component members of the small and unimportant Timote family of Venezuela; in his monograph on the Timote[6] he mentions 128 names for local groups, apart from the names of the villages occupied by them.

The multitude of languages in America has often been given as an argument for a comparatively great length of time of human occupation of this hemisphere. This concept presupposes that the first immigrants to America had a common speech. This is unlikely; it is more probable that each migrating group had its specific language, and that the number of presumably independent linguistic families was originally much greater than at present. Such a reduction has been the linguistic history of the rest of the world. These "families" may either have had a remote common ancestry or multiple unrelated origins; of the origin and early forms of speech we know nothing. All known "primitive" languages are highly complex and evidently have had a long period of development. Of course the minor dialects and obviously related languages were differentiated in America.

Since the main migration to America is believed to have been via Alaska, we would expect to find in South America languages of older migrations than in North America, the speech of the earliest migrants forced to the peripheries and to cul-de-sacs by later and more aggressive groups, and also small enclaves of moribund independent linguistic families. This applies especially to southernmost and easternmost South America, and to the speech of natives of paleoamerican physical type, such as the Ge and the Fuegians.

Regarding extra-continental relationships, many ill-conceived attempts have been made to show connections between South American native languages and Indo-European or Semitic ones; all these are so amateurish that they have been accorded no scientific attention. Dr. Paul Rivet is firmly convinced of the connection between Australian languages and Chon, and between Malayo-Polynesian and Hokan. Instead of by direct trans-Pacific voyages, he believes that the Australian influence came via the Antarctic during a favorable post-glacial period not less than 6,000 years ago.[6a] This radical thesis has met with no acceptance among North American anthropologists. The data offered in its support fall short of conviction, but probably have not received sufficient careful consideration.

It is possible that some of the South American languages belong to the great Hokan or Hokan-Siouan family or phylum of North America. (*Cf.* Yurumangui, Kechua.) Since isolated Hokan enclaves are found as far south as Nicaragua, evidence of migrations across Panama would not be entirely unexpected. A number of languages from Colombia to the Gran Chaco have Hokan-like morphological patterns. Dr. J. P. Harrington is convinced of the Hokan affiliations of Kechua, but his published article[7] fails to carry conviction, and no other argument for Hokan in South America has been presented. Such Hokan migrations, if proved, were probably at a relatively early period.

On the other hand, several of the great South American families have penetrated the southern peripheries of North America. Chibchan languages occupied a solid area, with possibly a few small enclaves of other families or isolated languages, as far as the Nicaraguan border, and the probably affiliated "Mosumalpan" (Miskito-Sumo-Matagalpa) would extend this area to cover Nicaragua. Arawak and Carib extended over the Lesser and Greater Antilles, and the former may have had a colony on the Florida coast.

In 1797 the native Carib Indians remaining in the Lesser Antilles, mainly on St. Vincent Island, were transported to Roatan Island off the coast of Honduras. Mixing with the Negro population there they have spread over much of the coast of Honduras and parts of British Honduras. They now number some 15,000, most of them speaking a Carib jargon.

The trend in the classification of American languages has been quite opposite in North and in South

[6] Paul Rivet, La Famille linguistique Timote. International Journal of American Linguistics, 4, 137–167, New York, 1927.

[6a] Paul Rivet, "Les melanéso-polynésiens et les australiens en Amérique," in *Anthropos*, XX, 51, 1925, and many other articles. (See bibliography in Pericot, p. 432.)

[7] John P. Harrington, "Hokan Discovered in South America," *Journal of the Washington Academy of Sciences*, 33: 11, 334–344, Washington, 1943.

America. In the former, radical scholars believe that all the many languages formerly considered independent may fall into six great phyla: Eskimo, Na-Dene, Algonkian-Mosan, Hokan-Siouan, Macro-Penutian and Macro-Otomanguean, plus the South American phylum Macro-Chibchan. In South America, on the contrary, the more recent classifications have increased rather than reduced the number of families or groups given independent status. Most of these new ones, it must be admitted, are one-language families, often extinct, and generally based on one or a few short vocabularies that show little or no resemblance to any other language with which they have been compared. These should be considered as unclassified rather than as independent families. It is certain that the number will be greatly reduced as the languages become more intensively studied, but doubtful if it will ever reach such relative simplicity as in North America. Almost certainly the linguistic picture will be found to be far more complex than in Europe and Asia.

One of the main reasons for the great difference in the proposed number of linguistic families in North and South America is that the study of South American linguistics is now about in the same stage as that of North American languages thirty years ago. Since that time many trained students, both in the United States and in Mexico, have studied the native languages intensively, largely under the direction or example of the late Drs. Franz Boas[8] and Edward Sapir. Except for the indefatigable Dr. Paul Rivet and Curt Nimuendajú, South America has had few linguistic scholars of wide interests and scientific viewpoint, and until recently very few trained younger men. The North American languages have been grouped into six phyla, mainly on grounds of morphological resemblance and intuition, and in this the students have been aided by the fact that the languages are fewer, and fewer of them extinct, so that such morphological studies could be made. South America suffers not only from lack of students, paucity of grammatical studies, multitudes of languages, extinction of many of them, but also from the practical problems of linguistic research: immense distances, poor transportation, difficulties and expense of expeditions, lack of capable interpreters and similar handicaps.

The history of attempts to classify the languages of South America was reviewed by Chamberlain in 1906.[9] The earlier classifications, such as those of Adelung and Vater, Balbi, Castelnau, Gilij, Hervas, Ludewig, von Martius and d'Orbigny, were not considered therein, and need not be here. Modern classification began with Brinton in 1891.[10] With his usual far-seeing good sense, not "curiously enough" as Chamberlain remarks, Brinton refused to enumerate or list his "stocks," but apparently recognized nearly sixty. In many later short articles Brinton continued to alter his groupings. Other lists published in the next few years were McGee, 1903 (56); Chamberlain, 1904 (57); Ehrenreich, 1905 (52). All these differ more than the slight variation in total would suggest. Chamberlain then gave his own list, totalling 83. Later he published a revision of this, which became the standard classification in English for a decade or more.[11] Though the total of 83 stocks is exactly the same as in his earlier list (plus 77a), the number of alterations, deletions and additions is great.

Since 1922 a number of classifications have appeared. Krickeberg[12] stressed only the fifteen most important families; based on this Jiménez Moreno published a large distribution map in color.[13] P. W. Schmidt also wisely did not attempt to enumerate and list every family, but discussed them under 36 families or groups.[14] Curt Nimuendajú has never attempted a complete linguistic classification of South America, and his unpublished map and index do not include the far north, west and south, but his first-hand knowledge of the rest of the continent is unexcelled. In this restricted region he recognizes 42 stocks, 34 isolated languages and hundreds of unclassified languages, the latter generally without any known linguistic data.

Two comprehensive classifications of all South American languages have been made in the last twenty years. Paul Rivet,[15] combining some of Chamberlain's families, separating others, reached a total of 77. Pericot[16] follows Rivet very closely, but not in

[8] See especially "Handbook of American Indian Languages," edited by Franz Boas, Parts 1 and 2, Bulletin 40, Bureau of American Ethnology, Washington, 1911, 1922; Part 3, New York, 1933.

[9] Alexander F. Chamberlain, "South American Linguistic Stocks" in C. R. Congr. Internat. d. Amer., XV^e Sess., Quebec, 1906 (1907), t. II, pp. 187–204.

[10] Daniel G. Brinton, "The American Race," N. Y., 1891.

[11] Alexander G. Chamberlain, "Linguistic Stocks of South American Indians, with Distribution-Map," *Amer. Anth.* (n. s.), 15, 2, 236–247, 1913.

[12] Walter Krickeberg, "Die Völker Südamerikas," pp. 217–423, in Georg Buschan, Illustrierte Völkerkunde, Stuttgart, 1922.

[13] Wigberto Jiménez Moreno, "Mapa Lingüístico de Sudamérica, según Krickeberg; bajo la dirección de Wigberto Jiménez Moreno; lo dibujó Agustín Villagra. Publicación hecha por el Instituto Panamericano de Geografía e Historia, en colaboración con el Museo Nacional y con el Instituto Mexicano de Investigaciones Lingüísticas, en 1937." Mexico, 1936.

[14] W. Schmidt, "Die Sprachfamilien und Sprachenkreise der Erde," Heidelberg, 1926.

[15] Paul Rivet, "Langues Américaines. III. Langues de l'Amérique du Sud et des Antilles," 639–712, in A. Meillet et Marcel Cohen, "Les Langues du Monde," Paris, 1924.

[16] Luis Pericot y García. "América Indígena." Tomo I: "El Hombre Americano—Los Pueblos de América." Barcelona, 1936.

numerical or alphabetical order. The most recent classification and the most radical—or most conservative, according to the point of view—is that of Loukotka.[17] Dividing more of Rivet's families than he combined, he enumerates 94 families with a total of some 558 languages. Later he revised the details somewhat, but only regarding the languages of Brazil. In this latter article he notes the linguistic sources for each language.[18]

South American linguistic history or philology does not extend before the beginnings of the sixteenth century with the first words and observations made by European voyagers. No native alphabets had been developed; there were no hieroglyphs, and even pictographs, petroglyphs and picture-writing seem to be less than in North America. The Peruvian quipus were arithmetical, astrological, divinatory and mnemonic. There was a tradition among the Kechua at the time of the Conquest that they had once had a system of writing on tree leaves that was later forbidden and forgotten,[19] but this is given little credence by modern scholars, and no trace of it remains. A system of writing has been claimed for the Chibcha also, based, not on tradition, but on the peculiar, and apparently non-pictorial character of many pictographs in Colombia; this also has received no credence among archeologists. On the other hand, the modern Cuna of Panama have developed an interesting existent system of mnemonic picture-writing.[20]

Two of the native languages merit special mention as having become, after the Spanish Conquest, *lenguas francas* of wider extent and use than formerly. The Tupi of the Brazilian coast became the basis of the *lingoa geral,* the medium of communication of priests and traders throughout the Amazon drainage; it is now generally replaced by Portuguese. The Cuzco dialect of Kechua became the culture language of the "Inca" region and extended its area even before the Conquest; after the latter it continued its spread and was adopted as a second language by the Spanish in Peru. Neither language has to-day, however, the cultural position of the Maya of Yucatan, for instance, though both have added many native terms in the Spanish and Portuguese of their regions, and even throughout the world, such as *tapioca, jaguar, llama, quinine.* It has been estimated that 15 per cent. of the vocabulary of Brazilian Portuguese is of Tupi origin. In Paraguay, Guarani is considered a culture language, and some newspapers are published in it.

For those exact-minded scientists who may be appalled or disgusted with the classificatory disagreements noted above, let me close with a quotation from a great linguist: "Essayer de faire une classification exacte et complète de toutes les langues en familles rigoureusement définies, c'est montrer déjà qu'on n'a pas compris le principe de la classification généalogique des langues."[21]

OBITUARY

OSCAR FLOYD POINDEXTER

OSCAR FLOYD POINDEXTER was born on December 8, 1898, at Cynthiana, Kentucky. He was educated in the schools of Cynthiana and the University of Kentucky. On October 4, 1918, he enlisted in the S.A.T.C. of the University of Kentucky and was honorably discharged from the United States Army on December 18, 1918. He then continued his education at the University of Michigan, deserting agriculture, his major at Kentucky, for geology and mineralogy, and received the A.B. degree in geology and mineralogy in 1922 and the master's degree in 1924. During the undergraduate years at the University of Michigan he was a teaching laboratory assistant in the department of mineralogy supervising students in the identification of minerals. In June of 1924, he first entered the service of the State of Michigan in charge of a field party mapping deposits of road-building materials for the State Highway Department under the direction of the Geological Survey Division, Department of Conservation. He was in charge of the field parties during the summers of 1924 and 1925 and in full charge of the road material survey in the summer of 1926. During the scholastic years, 1924 to 1927, Mr. Poindexter was instructor in petrography and general economic and engineering geology in the Case School of Applied Science, Cleveland, Ohio. In June, 1927, he resigned from Case to permanently enter the service of his well-loved adopted State, Michigan, as mineral economist of the Geological Survey Division of the Department of Conservation, and continued as chief of the road materials survey, discovering, testing, mapping hundreds of deposits and writing summary reports of each deposit, as well as working in and writing more detailed reports of the other mineral

[17] Chestmir Loukotka, "Clasificación de las lenguas sudamericanas," Prague, 1935.

[18] Chestmir Loukotka, "Linguas indigenas do Brasil" in *Revista do Arquivo Municipal,* LIV, 147–174, Sao Paulo, 1939.

[19] Montesinos, 1840, 1920, Chaps. 7, 14, 15; Bingham, 1922, Chap. 16; 1929, Chap. 9.

[20] "Comparative Ethnological Studies," 7, Göteborg, 1928, 1930.

[21] A. Meillet, "Les Langues du Monde," Paris, 1924, p. 10.