CHAPTER TEN

PEOPLE AND THEIR DISTRIBUTION

It was several years after meeting W. M. Davis, and while Head of the Geography Department at the Michigan State Normal College, Ypsilanti, that Jefferson began to realize that there was more to geography than the ge. He began to notice people, dwellings, and culture, began to realize that human beings created patterns on the face of the earth. He remembered the words Davis had once spoken to him, many years previously: “What is a city? Nobody knows what a city is.” He promptly commenced study of the distribution of population, a matter which fascinated him to the end of his days.

Jefferson published his first essay concerning the distribution of population in the Bulletin of the Geographical Society of Philadelphia, July 1907. The article, entitled, “The Distribution of People in South America,”1 was abstracted in the following words for The International Catalogue of Scientific Literature:2

Points out that the people live in the highlands in the Tropics, not far from the sea, while beyond the Tropics they are found on the plains. Cities of more than 5,000 people are grouped in the same way. Further confirmation is found in the size of provinces, small in the well settled regions and large where men are rare. A word is given to the use of such maps in schools.

Five maps illustrated the article: the distribution of population in South America; the high cities of South America; size of all cities with over 5,000 people; people per square mile in each province; the distribution of population according to Berghaus' Physical Atlas, 1884. The first four of these Jefferson believed to be an advance upon any maps then known and stated so in his text. Intelligent observation and reasoning concerning population distribution dominate the article,
which was certainly a departure from the tradition of geography in North America. Interestingly, Jefferson stated in his concluding paragraph:

The result of such studies, a fairly correct view of the distribution of people in a continent, is entitled to prominence in teaching geography. Formerly, such maps were not possible. A statement in words of the facts of such a map leads to many questions of cause that introduce relief, temperature, rainfall, and commerce in a very natural way.

Less than six months later, Jefferson presented a paper entitled "The Distribution of Population Over the Earth" before the fourth annual meeting of the Association of American Geographers, Chicago, December 30, 1907-January 2, 1908. It was the first population distribution study to be read before the Association, and it aroused interest. He received several requests by correspondents for copies of the population maps which illustrated his presentation. Almost certainly Jefferson spoke from notes rather than from a completed text, as was his habit at Association meetings. Unfortunately, only the title, not accompanied by an abstract, was listed in the 1907 program, published in the Annals of the Association of American Geographers. The population density maps of North America, Europe, and the World, which had been shown at Chicago, were, however, reproduced in his book, Teachers' Geography.


Men live where there is more than twenty inches of rain in the year, which is in general east of the 100th meridian, on the south side of the 50th parallel. Exceptional parts of this last area are the tip of Florida and the Caribbean shores of Central America, where the rains are excessive and the vegetation almost untamable. The plant and climatic associations are pointed out that divide the continent between Latin and English races (Diagrams).

The Western Journal of Education published by the Michigan State Normal College at Ypsilanti, carried the article into many of the educational systems of the United States. There followed "Man in West Norway," an address Jefferson gave as President of the Michigan Academy of Sciences, Arts and Letters, at its annual meeting in Ann Arbor, March 1908. The address, later published in The Tenth Annual Report of the Michigan Academy and reproduced by the Journal of Geography, had been inspired by Jefferson's excursion to West Norway in the summer of 1904. Jefferson summarized the essay:
The Norsemen for all their large part in history, the widest, scattered folk in Europe. This due perhaps to their intimacy with the sea from early days. This intimacy like the sparseness of the peopling of the land, results from Norway's dearth of soil. The people cling only to the border of an empty land of rock.

The thesis of a near empty Norway peopled at its margins was one subject Jefferson used in his class texts until retirement. Numerous slides of his own Norway population maps accompanied by slides of the West Norwegian culture-scape were visual aids used both in his classes and public addresses. The study of early Norwegian migration and Viking raids led Jefferson to a study of Viking plunder paths and European population distribution through the centuries. From this informal study carried on in his notebooks, there emerged his thesis of the plains as an invitation to militarism, which he wrote up immediately as "Man's Distribution Over the Earth," and which thesis was further developed in the Hanson Bellows Encyclopedia and Man in Europe.

During the summer and fall months of 1908 Jefferson gathered data and ideas for a paper which he delivered to the Association of American Geographers, Baltimore, December, 1908. "The Anthropography of Great Cities" was abstracted in the Annals of the A.A.G. as follows:

The distribution of population density within great cities is under geographic control. The greatest density encompasses the business center where are many more residential buildings. Beyond this, population becomes less dense to a grade of ten thousand to the square mile, which is taken as suburban. The anthropographic city thus includes all adjacent territory populated more densely than this, regardless of political boundaries. There result anthropographic values of the population of great cities that are comparable. Geographic limits to a city's expansion immensely add to the maximum density within it, as shown by New York and Chicago with higher and lower densities than London, Paris, Berlin or Vienna. Attention was given to the causes and epoch of great cities, with a glance at the population of imperial Rome.

The paper was a great success and brought recognition to Jefferson, who recalled this circumstance many times in autobiographical notes he composed during his retirement years in the 1940's and in several letters, typical of which is the following:

... by 1909 [I had] published the "Anthropography" from the Baltimore meeting of the A.A.G. Like all my previous papers before the Association, it was received rather contemptuously, Goode and Tower complaining that I put them out of Chicago and Philadelphia where they lived, because I claimed that the essence of a city was not a
charter and charter limits—except for lawyers—but people living to­
gether in a huddle indicated, I suggested, by a continuous population
density of say 10,000 per square mile or more. They lived in the less
populous residential parts that characterize even large American cities,
which I call suburban.

Professor Albrecht Penck of Berlin (possibly Vienna at that date)
rose and commended the paper warmly, pointed out that Charlotten­
burg was one city with Berlin, opposite sides of the street being in the
two cities.

That made a great impression. My work was thereafter worth atten­
tion because one of those Germans that knew things approved of it! The
American Geographical Society of New York asked for the arti­
cle, paid for it—which had never happened to me before,—and asked
me to become one of their contributing editors to write what occurred
to me at a fixed price. I have done so ever since.

That one should only be recognized when accepted authority ap­
proves, regardless of the content of one’s contributions, would not
seem to make for scientific progress, but it is useful for a young
worker to bear in mind.

 Barely a week after the completion of the meeting Huntington wrote
to Jefferson:15

... I wonder if you realize how much interest your paper at Balti­
more excited. It made everyone sit up and listen intently. I wish we
had dozens of such papers. They make geography extremely interesting
and valuable. Give us some more.

The following day the Secretary of the American Geographical Soci­
ey, Cyrus C. Adams, invited Jefferson to publish his paper in the
Bulletin of the Society:16

We shall be glad to publish in the “Bulletin” of this Society the paper
which you recently read before the Association of American Geogra­
hers if you are able to send it to us for that purpose. From what we
have heard we believe the paper is just such a contribution as is desired
for our pages. The Society pays for the articles it prints at the rate of
$8.00 a thousand words. Hoping that you can oblige us in this matter.

Jefferson replied to this letter:17

The “Paper” on the Anthropography of some great cities only exists in
the form of notes at present, though a few days would probably suffice
to put it in shape for the printer and I should be very glad to have it

The resultant publication appeared in the September issue of the
Bulletin of the American Geographical Society.18 “The Anthropogra­
phy of Some Great Cities: A Study in Distribution of Population,” was
8,686 words in length and provided Jefferson with a check for $69.48... "My first invitation offering cash for a really scientific article!"

The idea of city anthropography was original. The article, "The Anthropography of Some Great Cities," a tour de force of powerful writing and thought, became important to the entire literature of urban geography. It had been composed only after many letters had been sent to friends, postmasters, Chambers of Commerce, police departments in numerous U.S. cities, and the letters and replies filed, and the results compiled in a notebook. This was a typical Jefferson procedure; gathering the facts, mounting them in meaningful arrangements, then, after much study, breathing a new life into statistics remote of meaning.

Numerous ideas abound in the paper. Essentially concerned with city population densities the paper examined the meaning attaching to real and supposed density figures and began with a rejection of traditional population estimates for imperial Rome. Bounded by the Aurelian wall and enclosing an area of 4.47 square miles of land, estimates for the Roman population had been calculated variously between one and two million. Yet Jefferson noted that "the first census count seems to have been made in Sweden, 1750," and that no accurate figures exist for Rome. He proceeded to explain that the "million cities" of the Nineteenth Century were a product of the industrial revolution, and the plains which constituted their sustenance space. Taking Million Cities of the world and using figures for 1900-1905, Jefferson listed their population, area, and population density per square mile. Paris, with all her modern paraphernalia, boasted a density figure of only 88,000 people to the square mile in 1901. If the Rome of the Aurelian Wall had a total population of 2 million her density would approximate 447,000 to the square mile. If the Romans numbered 1 million, the density of the imperial city would have approximated 223,500 people to the square mile. Jefferson recognized that Bombay in 1901, with 35,000 people to the square mile was the most densely populated city of the East then counted, yet if Rome enjoyed a similar density her total population would have numbered approximately 156,000 plus suburbs. After concluding, "that the old population was less than 500,000 will be confirmed by a study of the grading of population within the cities of today," Jefferson continued the task of elaborating on the question, "what is a city." He amassed data concerning the population density in contemporary cities and arrived to the belief that the city could be best defined and delimited only in these terms. This gave rise to his notion of the anthropographic city:

A continuous area having everywhere ten thousand or more people to the square mile is a city... For distinction from the political city,
this may be called the anthropographic one or city according to the
distribution of people, just as lines indicating grades of population
density may be called isanthropic lines and the maps isanthropic maps.

... As for the method of drawing the isanthropic line of 10,000, it is
a makeshift, perhaps the best thing that can be done to remedy the
existing lack of uniformity in the meaning given to the name "city".

Boundaries to the anthropographic city were draughted for St. Louis,
Chicago, New York, Vienna, Berlin, Paris, London. The article was
briefly summarized (120 words) by Baulig in the *Annales de Géogra­
phie* and by Otto Most in *Petermann's Mitteilungen der Geographie*
(700 words), and also by Griffith Taylor in his chapter "Urban Geog­
raphy," of the book *Geography in the Twentieth Century*19... "In
America Mark Jefferson was the pioneer, with such papers as that of
1909 which dealt with the anthropogeography [sic] of some Great
Cities." Taylor also referred to this article in his book, *Urban Geogra­
phy*, in the following words:20

Perhaps we owe more to the veteran geographer, Mark Jefferson, than
to any other in this field. As long ago as 1909 he wrote a brochure on
the anthropogeography [sic] of some great cities, which was a pioneer
among general urban studies. It dealt largely with variations in the
densities of the wards of the great cities. Many great cities show a
relatively empty nucleus surrounded by a zone of wards of high den­
sity (Fig. 78). Outside this again is a zone of larger wards with much
lower densities. Various great American and European cities were
charted by him to show this feature...

Numerous American geographers wrote and thanked Jefferson for the
Anthropography paper, including A. P. Brigham:21

... I am particularly glad to have the Baltimore paper in full. It will
be very useful to every geographer who studies our cities and I for one
appreciate the great amount of work and research which you put into
it.

The city anthropography article of 1909 was followed in the *Bulletin*
by "New York and the four next largest American cities in 1910," a
note in *Geographical Record*.22 Jefferson applied his anthropographic
city definition to New York, Chicago, Philadelphia, Boston, St. Louis,
gave their respective anthropographic city populations and annual popu­
lation growths. He wrote on the anthropography of New York:23

The city at the Hudson mouth has now over 5,000,000 inhabitants in
the four municipalities, New York, Jersey City, Hoboken and New­
ark. Furthermore, it has gained over 1,500,000 since 1900. The city is
still smaller than London, but its growth is over twice as rapid and it
will probably outgrow London in the next decade.

The map—interpretation of the map—the point of view geographic, i.e. that there is a human response to environment which may be made out on such a map, the grades of density, their selection and history. The U.S. Census grades, influence of the point of view, treatment of cities, treatment of forests, isanthropic lines, the data and their treatment.

A brusque, coarse writing, which did not allow style to challenge content for attention, characterized many of Jefferson's abstracts, but perhaps this abstract was so coarsely composed that it lost some meaning. The North American Anthropography paper was reproduced in the *Bulletin of the American Geographical Society* in March, 1913. The population density maps accompanying the article were among the most adequate of their kind produced to that date. As the abstract suggested, population distribution and reasons for it were the essential concern of the paper.

The *Bulletin of the American Geographical Society* of September, 1913, further advanced his published observation concerning population studies with "A New Density of Population Map of Europe." This article offered the readers of the *Bulletin* analysis of a map and accompanying statement by L. Weise published in the January, 1913 issue of *Petermann's Mitteilungen*. Of this work Jefferson wrote: "Dr. Weise publishes a painstaking and extremely interesting new map of the distribution of population densities in Europe. Despite his modest disclaimer it must certainly be regarded as the map for its continent." Weise's map, which incorporated information from the censuses of 1910-1911 and which indicated twelve densities of population by color shade was simplified and redrawn by Jefferson (five density levels and black and white shading). This map was later reproduced in his texts, *Teachers Geography*, *Notes on the Geography of Europe*, and *Man in Europe*.


*People are not leaving the country as often stated. Five million more country people in 1910 than 1900 in U.S. People are leaving*
some country places and going to others. Rural population in the United States growing almost as fast as total population of Germany. Cities being taken as smaller and smaller by census. Really cities are springing up wonderfully as a result of country growth. It is normal that country population should remain thin, that cities should take up part of natural growth of country. Country, isolated houses, village neighbour houses, city defense against neighbors, at less than 300 per square mile, 300 to 10,000 and over 10,000.

Jefferson very positively developed the notion of an intimate relationship between urban and rural areas. With us, cities are as sure to spring up with the increase of country population as the forests to disappear. City and country are organically related. Crops cannot be grown without fields, nor exchanged and manufactured under the modern system of division of labor, without cities. Only in the rudest pioneer settlements do men dispense with this division of labor by doing everything painfully and badly on the farm. Such settlements are retarded and hampered until they have towns for the city part of the work. When we estimate that the average inhabitant of New York may have but a few score square feet for his own use, we are apt to forget that he can only exist on them because somewhere in the country there are acres of ground producing for him, as really and definitely for him as if he owned them and hired the labor on them—what Professor Penck has called his “sustenance space”.

The article was widely read, fetched Jefferson a much-needed $60 check and occasioned comment in Outlook Magazine, September, 1913.

It is a severe indictment of the city that Mr. G. S. Dickerman presents in the September number of the Atlantic Monthly. From him one would get the impression that the city is a leech that is sucking the blood of the country, a siren that lures the young to destruction, a monster which enslaves the growing child to arbitrary convention and robs him of self-reliance. Yet if, at its worst, the city is an evil, it is a necessary evil. And at its best it is something more. In the same number of the Atlantic in which Mr. Dickerman’s article appears there is an article by Professor Mark Jefferson, who occupies the chair of Geography in the State Normal College at Ypsilanti, Michigan. Professor Jefferson shows the other side, the more promising, more constructive side of city life. He presents the cities as creatures of the country “that supplement and crown the life of the land.” To the city, “with banks and high schools and theaters and factories, and stores with costlier grades of furniture and clothing and objects of luxury,” the farmer goes to sell his crops; to it he looks “for the culture he wants in
the form of religion, of education for his family, or of social intercourse and entertainment;" in it "he and his wife hope to spend their last days." In this way the city, at its best, represents the ideals, or at least many of the highest ideals, toward which modern civilization moves.

At the annual meeting of the Association of American Geographers at Princeton, December, 1913, Jefferson offered a paper entitled "The Growth of American Cities," which paper was an extension of his thinking concerning "A Hopeful View of the Urban Problem."

In 1914 another Jefferson population article appeared in the *Bulletin of the American Geographical Society*: "Population estimates for the countries of the world from 1914 to 1920." Abstracted in deceptively simple form for *The International Catalogue of Scientific Literature* one reads:

*By plotting the population estimates of the last four decades, a curve is obtained and projected to 1920. From this is read off the values for the given years for 116 countries or groups of countries, the populations they will have if no catastrophe intervenes.*

Curves were plotted in Jefferson's City Notebook for 116 countries of the world, several of which were reproduced in his *Bulletin* article, and their respective populations were calculated for each year between 1914 and 1920. Five tables of statistics were compiled: population of the countries of America, Europe, Australia, Asia, and Africa. The reliability and recentness of census reports and other sources of data used were written into the text, and the 1914 population of the world calculated to be 1,669 million.

In the June, 1914, *Bulletin of the American Geographical Society*, Jefferson published "The Revolution and the Mexican Plateau." The inevitable distribution of population map accompanied the article which Jefferson abstracted as follows:

*Shows how the populous part of Mexico, which includes its large cities was more than five thousand feet above the sea and that at that time (June 1914) the revolution had barely got up to that level from the fringe of lower levels where it began.*

Later, in the January volume, 1917, of the *Geographical Review* this article and map were reprinted with only a slight modification in an article entitled "The Frontier Region of Mexico: Notes to Accompany a Map of the Frontier." At the request of the American Geographical Society in December 1916, Jefferson wrote a supplemental note for this article. The two printings of Jefferson's Mexican study focused attention on the value of studying the distribution of people, at a time when the U.S. national interest was involved.

Meanwhile Jefferson's prolificity with regard to distribution and den-
sity studies continued unabated. At the eleventh annual meeting of the Association of American Geographers at Chicago in December 1914, he presented, "Regional Characters in the Growth of American Cities," published the following year in the *Bulletin of the American Geographical Society* under the title "How American Cities Grow." Bowman reproduced Jefferson's map and ideas concerning types of city growth in North America in the *Supplement to The New World*, 1923. The paper, "Regional Characters in the Growth of American Cities," was abstracted in the *Annals of the Association of American Geographers*.

The details in the growth of our cities reveal an intimate relation to their environment. Thirty-four cities of the Humid East show vigorous growth adding larger numbers to their population with each decade. Cleveland and Columbus are fine types. Their platted curves are concave upwards. The river cities of the Humid East after early vigor show halting growth, as the railroads superseded river transportation. Cincinnati is the type, with curve distinctly convex upward. There are six such and the Great Lake cities show symptoms of the same disease since 1880.

When the transcontinental railways opened up the Pacific Coast to the American people, who were adventurous and well equipped with material resources, there resulted an exuberant growth of the cities of the New West, doubling their population for two decades running. In this group are eight cities.

How little the political function helps a city is seen by the sorry figure cut by Albany as a growing organism. Every city of 100,000 in the country has long outstripped it. Washington though earlier vigorous shows distinct signs of atrophy since its disfranchisement.

Lecture notes and numerous slides suggest that the notion of vigorous, halting, and exuberant city growth was a favorite theme with Jefferson in the classroom. Later Jefferson repeated his thesis of growth types in *Man in the United States*, 1933.

In the November issue of the *Geographical Review*, 1916, Jefferson published "The Distribution of People in Japan in 1913," which was later rendered more accurate by a note in the French publication, *Annales de Géographie*. Jefferson acknowledged and reduced the note to English in the *Geographical Review*. The text, map, and district population figures used, were the result of an extended correspondence between Jefferson and Naomasa Yamasaki (the two geographers had met each other on the Liverpool-Rome excursion of 1911). Jefferson laboriously traced and plotted, retraced and replotted population maps of Japan, sending them to Yamasaki—first incumbent in the chair of geography established at Tokyo Imperial University in 1911—for improvement,
always with queries and usually with some postage stamps for Yamasaki's philatelist children. After several months of collaboration, he sent his Japanese density of population maps, 100,000 city map of Japan and Korea, accompanied by a text, to Isaiah Bowman, the recently appointed Director of the American Geographic Society. Bowman had proofs made of the article which was returned to Jefferson for approval. Bowman's editing of the text produced an interesting written statement from Jefferson concerning his notion of anthropography: 46

In the text I have restored Anthropography (the distribution of man) for anthropogeography (the interaction between earth and man). The difference one of principle with me. I want to study the facts of distribution just as objectively as if they were quite matter of chance and then point out other facts to say it looks as if, as Davis says. That is why I closed my paper—at the end—by calling attention to regions of falling population or smaller growth and then writing "it is a very rugged mountainous region". I do not at all like your changing this, and making me say this is attributable to the mountainous character of the region.

And if this letter encouraged him to distinguish anthropography and anthropogeography, Jefferson lent definition to the term, only three months later, in his Presidential address to the Association of American Geographers entitled "Some Considerations on the Geographical Provinces of the United States": 47

Anthropogeography—A second sort of human geography is usually called anthropogeography. It attempts to explain the character and habits of a people by their environment. This field has special perils. A great part of what has been written is vague and fanciful rather than cautious and well-based. If no other explanation of qualities is available one may always refer to the "climate".

Anthropography—The third field has been less cultivated, but is fundamental. It studies the distribution of men over the earth as a static fact, regardless of their movements or occupation, but paying much attention to the closeness with which they occupy their region, or the density of population from place to place. The full topical name, distribution of population-densities, is somewhat cumbrous. As an arbitrary name Anthropography would have advantages, and its etymology is quite as good as that of many accepted names. The questions, Where are men and How many of them are there must be answered with some care before we attempt to explain the reactions of men and inanimate nature.

In the same address Jefferson states:

Yet it is curious that less attention has been paid to the facts of
anthropography than to the causes that ought to guide and control them. The geographic provinces of this viewpoint would be the actual groupings of men on the earth quite irrespective of any climatic or physiographic boundaries that should hypothetically control them.

It was anthropography, the study of population distribution, which was so central to Jefferson's conception of the spirit and purpose of geography in his post-Davisian days. The 9,000-word, 1916 Presidential address was a summary of Jefferson's anthropographic thought and research to that year. He advocated the anthropographic cause and insisted on the need for a world map showing settlements of more than 10,000 inhabitants. Three such maps, "Cities of the United States, India and the British Isles," were presented with the address.

The term anthropography was not adopted by American geographers, but at the 1914 Chicago meeting of the Association of American Geographers, Ellsworth Huntington delivered a paper entitled "The Anthropography of Guatemala."\(^4\) It is interesting to find references to Jefferson's anthropography mistakenly assuming the form of the word anthropogeography, as in Griffith Taylor's *Geography in the Twentieth Century*\(^4\) and *Urban Geography*,\(^5\) and Stephen Visher's obituary, "Mark Jefferson," in the *Annals of the Association of American Geographers.*\(^6\) The cover of the *Bulletin of the American Geographical Society* for 1909 refers to Jefferson's article as "The Anthropology of Some Great Cities."\(^7\) In 1915 Jefferson expressed his interest in matters relating to population study in a letter to Bowman: \(^8\)

I want to make a book on distribution of population that shall contain a lot of material that I have already gathered, without waiting to exhaust the subject or complete all the lines I have started. I think there is quite a lot of it. This has been on my mind a good deal lately, and today I find Huntington minded to make use of a number of ideas of mine that I would rather keep a claim to. But who would publish? There ought to be some color used as well as much black and white work. What can you suggest? I have thought of Wiley. Who would buy such a work? I fancy I hear him say. Who indeed? The little things I am working up here make good enough impression when I present them to make me feel that quite a little might come from these population studies were they fairly set out. Cities, towns and villages, and their relation to the tilled land, the great plains inevitably the basis of all strong peoples and all vigorous civilizations, the present war merely the most violent stage in the struggle for the hegemony of the great plains of northern Europe, where Germany felt hemmed in between Russia on the east and France on the west, while the plain of England was envied, her safe aloofness across the Channels silver
strand—those are the chapters in the story. The city map and the town map are the quickest road to insight.

Jefferson did not write the book he had proposed to Bowman, but he incorporated much of his thought concerning population distribution in Notes on the Geography of Europe published in July, 1917, by an Ypsilanti printer. This book of modest title was much revised and reprinted in 1924, 1926, and 1936 as Man in Europe. Jefferson's "Notes" occupied twenty-nine chapters, each consisting of a series of penetrating questions, occasional thoughtful excursuses and a map. His interest in population distribution is markedly reflected in the first eight chapter headings of the text:

1. Distribution of population—densities;
2. The Million Cities and Half-Million Cities;
3. The Great Cities, those that have over a hundred thousand people;
4. The Great cities and coalfields of Great Britain;
5. The cities of Great Britain and Ireland of over 10,000 people;
6. Millions of people in 1917, using the boundaries of 1913 and making no allowance for losses by war;
7. Thousands of square miles in 1913;
8. Number of people per square mile;

These chapters reflect the content of Jefferson's earlier population studies. Frequently he referred to his own published work in footnotes, but the early chapters of the "Notes" were not solely a summary of his previous thought. He managed to go beyond himself by the use of exercises—questions which bred further questions and which were suggestive of thought which lay beyond articulation. This Europe text, adopted by several universities, colleges, and normal schools, was one of the first human geographies of Europe written by an American. In 1916 there had been a correspondence between Huntington and Jefferson concerning the possibility of joint authorship of a Europe text, Huntington even visiting Jefferson in Ypsilanti to talk over the matter in detail, but the task was not jointly undertaken. Both men, independently of the other, published European Geographies in 1917.

Jefferson's book included the essentials of an article published in November of that same year, 1917, in the Geographical Review, entitled "The Distribution of British Cities, and the Empire." With this essay Jefferson became the first American geographer to demonstrate by text and map the location of swarms of British cities on the coalfields. He enumerated the swarms of South Wales, the Clyde, Newcastle, the Midlands and wrote that the intensity of the "city swarm" on British coalfields was not equalled by the U.S.A. or Germany. Many of the cities created, he noted, had for a sustenance space not merely the
British Isles but the British Empire. This notion of a city acquiring a trans-oceanic sustenance space was fresh to the thought of the time. Isaiah Bowman later reproduced Jefferson's "City and Coalfield" map in his book *The New World: Problems in Political Geography.*

From April to September, 1918, Jefferson led the American Geographical Society "ABC" Excursion. The several months' field work involved much study of settlement geography. Certainly the literature concerning people and their distribution was enhanced by two books and an article, products of the "ABC" Excursion: *Recent Colonization of Chile, Peopling the Argentine Pampa,* and "Pictures From Southern Brazil."

In the latter part of 1918 and early 1919 Jefferson worked with the Inquiry and then for the American Commission to negotiate peace at Paris. His interest in population distribution reveals itself in the maps he chose to draw, rather than to delegate while at Paris. Those he drew are to be distinguished by his signature in the bottom right-hand corner, or on the back of the map; frequently his self-drawn maps concerned the distribution of population. Several of these maps were retained by Jefferson in a private collection of original maps he kept in his home following the Paris conference. The following maps are some of those that Jefferson chose to draw himself:

554 —Russia—Cities.
unnumbered —Cities of Europe in 1910. Scale 1-6,000,000.
570 —France—Cities.
unnumbered —Cities and Coalfields of Germany. Scale 1-7,500,000.
571 —German Cities. Scale 1-3,000,000.
unnumbered —Hotel Beds in Switzerland.
573 —Austria Hungary—Cities. Scale 1-3,000,000.
unnumbered —The British Isles—Cities. Scale 1-4,300,000.
unnumbered —Cities of Europe 1911.
584a —Areas of Population of Dalmatian Islands in 1900.

In 1922 the Swedish geographer, Sten de Geer, journeyed from Stockholm to teach at the University of Chicago. He took the opportunity to seek out Jefferson to discuss population distributions. (Dating from 1905 Jefferson and De Geer had engaged in correspondence, initially concerning river meanderings, later concerning glaciation and the mapping of population.) De Geer stayed at the Jefferson home in Ypsilanti in the later part of August 1922. The pair then motored through Ohio into Pennsylvania. The journey and discussion constituted a significant part of the field work De Geer invested in his study of the geography of the United States manufacturing belt, later published in *Geografiska Annaler* as "The American Manufacturing Belt" and re-
viewed in the *Geographical Review* by Jefferson. On his return to Stockholm De Geer wrote Jefferson a note of appreciation:

*I am now since a few days in my home at Stockholm, and have just begun my courses here. I remember now my most interesting journey from Michigan past Ohio and into Pennsylvania, with large manufacturing districts and cities, many small American towns and the rural tracts passed, all showing many special American features. I will soon send a copy of Klaralfven. I hope you have reached Ypsilanti with your family after so many long Ford days. Please remember me to Mrs. Jefferson.*


The Great Cities paper of 1920 listed in descending order of size the 64 cities which the U.S. census of 1920 claimed had exceeded a population of 100,000. Whereas the census recognised group cities only after they had been politically united, Jefferson recognised non-politically unified group cities as anthropographic cities. For these anthropographic cities he computed total populations.

*The criterion used in selecting the adjacent towns to be included with a city is continuity of close, city-like occupation of the ground on land areas, which includes park spaces, properly a part of a city to maintain the health of its citizens, but does not include farm lands and meadows that may be included within the political city area, as in Queens Borough, New York. The group city so conceived is a more real city than the Metropolitan Districts of the Census Bureau, which include all population centers of 5,000 people within 10 miles of the city limits.*

Jefferson was again asserting the merits of the anthropographic city over the political city when he listed the components of group cities in a separate table, these cities including: New York, Philadelphia, Detroit, Boston, St. Louis, Pittsburgh, Buffalo, Cincinnati, Kansas City, Oakland, Louisville, Omaha, Norfolk, Duluth.

Encouraged by the success of this article, and in 1924, he essayed, “The Distribution of People in the United States in 1910,” whose main feature was three population maps on the scale of 1:91 1/2 million: “Cities of the North,” “Cities of the South,” “Cities of the West.” The text
which accompanied the maps offered brief explanation concerning city distribution. Concluding, Jefferson wrote:  

On all the maps we notice that the rivers are rarely strung with towns the way the railroads are. The railroads are now our principal means of transportation and the roads are beginning to rival them in the parts of the country where they are well built. Rivers with us, generally speaking, have long ceased to be of any great importance for transportation.

Everywhere the larger towns occur only where there are a number of smaller ones. Wherever there is but one town in hundreds of miles it is sure to be a little one. A town of ten thousand among towns of ten, and so on to the largest cities. A city of a million usually has others of a hundred thousand or more around it.

Our largest city, New York, has long been called the front office of the United States since large enterprises in all parts of the country find it to their advantage to have offices or agencies there.

These cities are the essential United States. Their distribution shows how the American people are rooted in their soil. Transportation has now become so vital that it will be hard if not impossible to find a town of ten thousand people that is not on a railroad.

Of this paper J. Russell Smith wrote to Jefferson:  

... Referring again to some of your map prowess. I have in hand, with a great deal of appreciation that map of yours showing distribution of people in the U.S. in 1910 as indicated by the distribution of cities... it is a corking thing.

The third of the decennial studies concerning Great Cities in the U.S.A., 1930, again returned to the question of city boundaries. Jefferson adhered to his notion that the real city, the anthropographic city, enjoyed a population density of 10,000 to the square mile, and then demonstrated with maps and text that the Detroit of the census was not anthropographic Detroit, the city he knew well, and which he had lived near for thirty years. Using anthropographic definitions and jousting for a wider acceptance of his anthropographic notion, he estimated that there were 87 great cities of more than 100,000 in the U.S., while the census listed ninety-six 100,000 metropolitan districts. Significantly he observed that, “for the first time in the history of the United States the decade 1920-1930 has seen great cities lose population,” and he cited the cases of Lowell, New Bedford, Fall River, and Wilmington, commenting “that such a thing never happened before, that every city to attain hundred-thousand size in the 128 years since New York first reached it, has continued increasing in size until the decade 1920-1930... a remarkable record.”
Jefferson noted that the increment of population growth in 1920-1930 was 16.1%, a much lower percentage than earlier decennial figures. He also observed that the 1920-1930 decade was the first in the history of the U.S.A. when emigration exceeded immigration, and he related the meaning of this loss to the cities. He analyzed the matter of potential population loss in the U.S. in an article, "Is the population of the United States now decreasing," published in the Geographical Review, October, 1934. The matter was revisited again by Jefferson in a note entitled "Our Potential Parents and Potential Population," published in the Geographical Review. Meanwhile a 500-word article entitled "City Growth," summarizing the Great Cities paper, appeared in the New York Times for January 16, 1933, barely days after the Geographical Review had been released.

Jefferson's fourth, the 1940 Great City paper, written when he was 78, indicated that the great cities of the U.S. had enjoyed a smaller percentage growth than in any previous decade, and that the percentage growth in U.S. population was larger than the percentage population growth of the great cities. The great cities, their total population, and decennial increase were the subject of study. The remainder of the paper was a continued elaboration distinguishing the political city from the "actual" or "anthropographic" city.

These four decennial great city studies of the U.S.A., published in the Geographical Review, found no imitators among the geographers. They were regarded as sound pieces of scholarship, have frequently been referred to by scholars, and bore constant testimony to his interest in the concept of the anthropographic city. Later, in 1952 the American Geographical Society reprinted "Great Cities of 1930 in the U.S. with a Comparison of New York and London," in Readings in the Geography of North America: A selection of articles from the Geographical Review.

Jefferson's interest in the U.S. census and its figures had stemmed from the time of his earliest interest in city geography. In the early 1920's Jefferson had strongly recommended to Bowman that key census workers should be made familiar with geographical studies concerning matters of population. By May of 1924 a Mr. Batschelet of the Census Bureau was sent to the American Geographical Society at Bowman's request and under Bowman's direction, though it was with Marcel Aubousseau that Batschelet did much of his reading and thinking. Four letters indicate Jefferson as a prime mover in this venture and one who insisted on the worth of distinguishing (his) geographic from (Fenneman's) physiographic provinces.

Jefferson to Bowman, May 9, 1924;
The Census Bureau has been reasonably responsive to my suggestions, in the few cases I have made any.

I have an objection to sending Sloan [a man from Census Bureau] to Fenneman, or to anyone who thinks geography the same thing as physiography. If one may judge by the last three school geographies published, his excellent revision of Physical Provinces has been an injury to school geography already.

Bowman to Jefferson, May 14, 1924:72

Mr. C. E. Batschelet, who has been appointed the Geographer of the Census, his appointment to run from August 1, when he finishes his work at the Society, has now arrived and begun reading in conferences under instructions of various members of the staff who can give him time. He spent a part of the morning with me out at my house discussing his plans and loading up on suggestions of various sorts. He is just an average bureau man, but he is most willing to receive suggestions and he is eager to have the support of the geographers of the country in working into his new position. We owe the suggestion of his coming to you, for Dr. Hill, whose letter you enclose and which I now return, sent me not only a copy of this letter but in addition a copy of your reply. As a result of further negotiation with him and of repeated agitation of the subject with my Board of Trustees I secured an appropriation of $500 to cover the man's expenses for three months while working here in New York.

It seemed to me, however, that we could greatly broaden the value of the experiment if we operated through the Division of Geology and Geography of the National Research Council and had appointed a committee which was national in membership. Above all, the committee was to include every geographer who had definite ideas as to the improvement of the census schedules or technique, or cartographic or other graphic methods. It seemed to me that Fenneman ought to be chairman of that committee because he had been serving as chairman of an earlier committee and had shown great skill in dealing with the Census representatives and with the members of his physiographic committee at an earlier time when he was completing his map. He was present at the Washington meeting of the Division of Geology and Geography of the National Research Council and that was also a reason, because it gave me a chance to talk over the matter with him in some detail. It is not my thought that members of the committee should deal with Fenneman hereafter when they want to convey a suggestion to the Census. The sole idea is that we should all pull together in getting the present Geographer equipped with some sort of training before he faces his new job. I suggested that you and Baker and a number of others should go on the committee because in your
case particularly there was evidence of more interest and intelligence with reference to the Census than anyone else in the country had exhibited. I told this to Mr. Batschelet this morning and asked him to write you at once and especially to acknowledge his gratitude to you for having made the original suggestion that he come here to study. It is Aurousseau principally who has him in charge at the present time and the thing that he is pumping into him to the greatest extent is city geography. So I asked Batschelet if he would not read your various papers on city geography and write you at once about the whole question of the lower limit of city size as represented upon the statistical schedules of the Census. I hope he opens up the matter thoroughly and that you will let him have every suggestion that occurs to you.

I represented both to the National Research Council and to Stewart and Hill of the Census that we had two main objects in view in inviting him to come up here: 1. To become actually acquainted through personal conference and through correspondence with American Geographers interested in his work. 2. To gather together suggestions of all kinds pertinent to the population volume of the Census and to some degree other volumes so that he would go back loaded with ideas from the start. It is these two objects rather than any broad program of instruction that we have chiefly in mind. I spent a good deal of time in telling him about the trend of your studies and about the importance of them and he is prepared to receive all your suggestions in the best possible spirit. You can write to him directly at the Society's address.

Jefferson to Fenneman, May 16, 1924:73

I have your letters referring to Mr. Batschelet's work at New York and one from Dr. Lawson announcing the appointment of the committee of the National Research Council—Fenneman chairman, myself among members—"to cooperate with the Bureau of the Census as regards those features of its work which concern the subject of geography and graphics". He enclosed a copy of Director Stewart's letter of April 29.

I am glad this committee has been formed and that you are Chairman. I have been in touch with the situation for some months and think it highly important that Batschelet have all the contact with Dr. Bowman possible. The census needs more geography and if anyone can awaken a Bureau man to the fact it is Bowman.

Within the next two weeks I hope to submit for the consideration of the committee some suggestions of mine, and speaking of physiographic divisions I wish you would make a statement of just what use of them the Census ought to make . . . .
My general feeling is that very sharp distinction must be made between physiographic regions and geographic ones, but I have been surprised to note how well your major Physiographic divisions fall into the groups of the cities of my 1910 map which I have just issued in form convenient for use. I send you a copy under another cover with the boundaries pencilled in on the "North map."

Jefferson to Bowman, May 16, 1924:

...I do not think you need to stress my work so very much to Batschelet, but he is in good hands with you and Aurousseau. I should not have wished to tie any strings to my suggestion that he come to you. You can make a man over in three months.

I thought first of asking to have him sent here, but that would have been useless. The very idea of a man from Washington regarding himself very likely as a high official coming to a fresh water Normal School! Nothing doing!

It is a matter of impressing that man with the dignity and importance of geography. You and your Environment (capital E) are needed. I think you will send him back impressed.

Bowman to Jefferson, May 20, 1924:

...The cities map marked physiographically...

In the meantime I am having Aurousseau study it and comment upon it to Batschelet. I am glad you found the physiographic boundaries useful. I see your point very clearly about the geographical provinces and of course the physiographic province map is not final... The real thing is the geographical province and I suppose we shall be discussing that for some years until we agree even tentatively upon the boundaries of such.

...He is already working most enthusiastically. If the plan succeeds we shall owe it all to your original suggestion. I shall not forget this.

A continuing interest and concern for population census figures inspired Jefferson to check Malthus' contention against available statistics. The resultant, "Looking Back at Malthus," published in the Geographical Review, April, 1925, commanded the attention of many geographers. A Bowman-authored telegram was sent to Jefferson from the American Geographical Society by editor Gladys Wrigley: "Great stuff. Leading article for April."

In the Annual Report of the Council of the American Geographical Society delivered January 21, 1926 one may read:

To the Fellows of the Society:

Among the papers in the Geographical Review that have stimulated discussion and represent new field work and new ideas the following may be mentioned as especially noteworthy:
“Looking Back at Malthus”, by Professor Mark Jefferson, discusses the trends of population growth and their relation to food supply.

A. W. Pezet of The Forum wrote to Jefferson requesting an article of 3,000-4,000 words in the vein of his Malthus paper to be used in a series of articles concerning war and peace,79 and Professor Wilson Wallis wrote to Jefferson:80

Professor Malcom M. Willey and I are preparing a resource book in Sociology, to be published by Knopf in 1929, and we should like to include in it your article “Looking Back at Malthus” which appeared in the Geographical Review, 1925.

A New York Times editorial for Sunday, April 25, 1925, entitled “Malthus Cross-Examined,” summarized Jefferson’s article in less than 600 words and in so doing advertised the Geographical Review and Mark Jefferson. (The latter was often to find his name mentioned in the pages of the New York Times in the years to come.)

Jefferson had presented his views concerning Malthus, albeit briefly, at the annual meeting of the Association of American Geographers, Washington, 1924, in a paper entitled “Malthus in the Light of Subsequent Events.” The published abstract of this paper reads:81

Malthus, living on the eve of the age of steam, feared that men would multiply so fast on the earth that some day they would be brought into terrible distress by hunger.

Abundant statistics of the hundred and twenty years that followed have not justified his fears. Food has become over abundant and populations shows distinct signs of being checked by another agency that operates independently of food supply. There is little likelihood that the world will ever be really crowded.

The Presidential address of that same meeting was given by President Marbut and was entitled “The Promulgation, Decline and Renaissance of Malthusianism and its relation to the character and Geographic Distribution of the soil”!

In his Geographical Review article Jefferson found fault with Malthus who had claimed that a doubling of the U.S. population within 25 years, lent substance to the doctrine that population, when unchecked, increases in a geometrical ratio. Jefferson indicated that Malthus’ claim for a doubling of the U.S. population in the Essay on the Principle of Population published in 1798, came only eight years after the first census was taken in the U.S.A. Jefferson wrote that the population increase of the U.S. was in large part due not to biological increase but to unusually large numbers of immigrants arriving from Europe. From census study Jefferson noted:82

Measured periods of doubling now known but none of them made in
Malthus' day, are for Finland, 49 years to 1800, 58 years to 1858, and something like 62 years the third time; for the United Kingdom 70 years; for England, 45 years the first and 55 years the second time; for Sweden, 105; for Spain 131; for Denmark 91. France gives no sign of ever doubling.

Jefferson quoted Darwin in writing that the suggested Malthusian idea of the food supply increasing in arithmetic ratio has no foundation even in theory and that "the distinction between rates of increase of man and his food is not sound. Both are organic, and both show the same tendencies." He insisted that in the century and a quarter that followed Malthus and in those countries which had a population census, the food supply had increased more swiftly than the population.

Regardless of the validity of conclusion written into the Malthus paper, Jefferson signified his ingenuity of thought and kept the matter of population very much before an audience of American geographers.

The following year, 1926, saw the publication of Atlas of Plates to Man in the United States and Principles of Geography. The Atlas of Plates offered a foreword which began:

A text is in preparation with the title Man in the United States, which is in large part built around the study of such facts as are here set out in diagrams. The plates are published in advance merely for class use while the text is being prepared. It will be enough to note here that two useful features of the diagrams are quite new. The expression of all material quantities in dollars, and the use of figures the material size of which on the diagram corresponds somewhat to the value they indicate.

The first map of the Atlas, "1920. Hundreds of Thousands in each state," was reproduced in the Swedish geographical magazine, Globen, in 1927 and an interest expressed in Jefferson's novel method of indicating population distribution. The same issue of Globen also reviewed his Atlas of Plates to Man in the U.S.A.83

Man in the United States eventually appeared in 1933 and was printed by the Ypsilanti Publishing Company. The earlier Atlas maps however were not reproduced; Jefferson had made new and different maps.

Later in 1926, in the eleven-chaptered, 131 page Principles of Geography (another revision of Teachers Geography with the title changed), Jefferson devoted two chapters and 36 pages to the questions, "Where the People are" and "Why the People are there." In brief statements and exercises for students, these chapters summarized his population thought to that time, presenting his population studies in the form of a simplified but easily digestible continuum rather than as
numerous diverse separates which had already become a fugitive literature. In 1931, *Exercises in Human Geography*, published by the Ann Arbor Press, Michigan, appeared and replaced *Principles of Geography*. The *Exercises* was reprinted in 1936. Exercises in population study graced the opening pages of both editions of the book. The title page of both editions carried the inscription, "Our Geography is mainly concerned with Men—where they are and what they are like."

In the summer school of 1931 Jefferson offered his first course concerning itself solely with the distribution of population. Geography 420, "Geography of Cities," was offered at the Michigan State Normal College summer session, and was one of the earliest courses in urban geography offered on a U.S. university campus. The course centered around numerous of the articles previously published by Jefferson. Reprints were circulated to the class, and questions and exercises were woven around this matter. The idea of the anthropographic city was amply in evidence. The course description read: "Deals with nucleation of population into villages, cities and towns, the nature of the Great Cities, their distribution and function in the life of modern countries." While the course was in progress, the *Geographical Review* published Jefferson's, "Distribution of the World's City Folks: A study in comparative civilization." In this stimulating and original piece of work which became one of his most often quoted articles, Jefferson wrote, "Cities do not grow up of themselves, countrysides set them up to do tasks that must be performed in central places." And so was born the term "central place." He insisted that "urban and rural, city and country are one thing, not two entities. Rural folk are only distinct from city folk in their sleep," and that in the numerous world censuses, no arbitrary ruling has been made or accepted distinguishing the rural from the urban. He insisted on the need for censuses of people awake, claiming that the city of New York at 2 a.m. was a very different entity from the New York of 2 p.m., a thesis to which he returned in the *Geographical Review* of 1933 with a note concerning day and night population densities in the city of Tokyo. A map, "Distribution of Great City Life, 1927," drawn on Jefferson's own six-six projection showed the percentage of population in cities of 100,000 throughout the world.

He produced statistics for each of the continents, showing the percentage of people living in the great cities of 100,000 or more population. Similar percentages were derived and listed for each of the countries of the world, and text was written concerning four world regions of "great-city" urbanization. A diagram illustrating the growing percentage of population in great cities by decades from 1870-1920 explained growth rates for eleven chosen countries. A fascinating diagram, chart-
ing the dates of attainment of U.S. and European cities to great city (100,000) size, was accompanied by the motive which inspired them to this accomplishment; "ocean," "river," "lake," "railway," or "other." In writing of the function of the super city, Jefferson was already conceiving his notion of the primate city. The essence of the paper had been delivered before the Association of American Geographers at Worcester in 1930, under the title "The Distribution of Urbanization." Of this paper the Geographical Review comments:

Mark Jefferson, in "The Geographical Distribution of Great Cities", presented a masterly analysis of the distribution of the larger cities throughout the world and their significance. This paper will be printed in the July number of the Geographical Review.

Abstracted in Jefferson's words the paper reads:

A percentage of urban population has been computed for many countries but on a variety of city bases, the city being taken at 500 people in Ukraine, 11,000 in Egypt, and 24,000 in Japan, and many values in between. These percentages are not comparable and cannot be used except to compare countries that use the same definition of city.

This paper selects the Great City (100,000) as the standard of urban life, for several reasons. Life in them is really urban, which life in towns from one to five thousand is certainly not. The data for these cities are readily obtained in all parts of the world, and the growth of cities that has characterized the last century was mainly in cities of considerable size. With urban thus defined we find that nearly half of the Australians and English (not British) live in such cities, a third of the New Zealanders and Australians and more than a quarter of the people of the United States, Netherlands, Germany, Canada, Argentine and Uruguay; of the Japanese 14%, of the Chinese and Indians about 2%.

These cities are modern. Their number has been doubled four times over in the last 125 years. The origin of such cities is European but they are not more numerous out of Europe than in that continent. In the United States the last century saw a regular succession of cities come to 100,000 size, first five ocean ports, then four river ports, five lake ports and lastly, from 1850 on, almost a new railway city every year. Europe had no such succession. She had all the great cities that were known in 1800, some of them ocean ports, some river ports and two grew to great cities by reason of their position at the crossing of land ways. In the second half of the century railways took up the transportation called for by great city life but the rivers and highways have already been of much use in Europe and continue so at the present time.
In studying the results we come on the regrettable fact that the census numbers for great cities are only for their sleeping moments, and at time omit large numbers who yet spend in them all their waking, working moments. The city in which we are interested is awake and at work. We need to know how many go in cities daily for their active avocations.

Following publication in the Review, Bowman wrote to Jefferson:

Your stuff in the Geographical Review is crowding out editorial comment on the moratorium, baseball, Al Capone, "Legs" Diamond, Will Rogers, and the economic depression. I like the title of the second editorial, "More About Cities".

Believing that you will wish to keep Dr. Finley's letter as a souvenir I enclose it herewith. There are many others in our file, so we shall not miss this one.

It must be a great satisfaction to you to see the effects of a piece of work so widely distributed. An editorial also appeared in the New York Evening Sun, which I understand has already been forwarded to you by Miss Wrigley.

The enclosed letter from Dr. Finley of the New York Times reads:

Dear Dr. Bowman,

There was so much interest in this article of Mr. Jefferson's that more than one editor wished to write about it. The President of the American Geographical Society could not have done as well as one of his associates has done.

The day following Finley's letter, two editorials summarizing Jefferson's article appeared in the New York Times, under the titles "Counting Noses at Night" and "By Daytime Count."

Later that same year, the American Geographical Society awarded the Cullum Gold Medal to Jefferson for "his ingenious and fruitful inquiries into man's distribution on the earth."

Jefferson's concern for city anthropography was part of a larger interest in national anthropography: an inquiry into the distribution of population for a country.

For several years I have realized that political maps are grievous sinners against sense in spreading their color evenly over the whole territory of countries, as if the Sahara were just as French as Algeria (if Algeria is French). I enclose a little map of South America, giving the national color to something like an ecumene or inhabited area and using only a very faint tint for the rest. With my craze for novelty of expression this appeals to me. One part of Brazil is not as Brazilian as another. The difficulty of course is to delineate the Ecumene, the outline on the South America being very crude. Emboldened by Mr.
Raye Platt’s delineation of the inhabited valleys of the eastern Andes I attempted in August 1932 to make a delineation of the ecumene of all Latin America on his large base map (1:6 million?) by simply sketching lines around the towns on that map (and some larger in Peru). It is venturesome but certainly gives a picture that corresponds much better to the truth than the usual flat tint which implies equal occupation of the whole area. I am meaning some day to reproduce this on a small scale.

Jefferson attempted to define the extent of an ecumene in an article, “The Problem of the Ecumene: The Case of Canada,” which he sent to Gladys Wrigley, editor of the Geographical Review. This was the first Jefferson paper Miss Wrigley refused to accept in its then current form. The following letter Jefferson sent to editor Wrigley warrants reproduction since it reveals in part a program of work which he had established for himself.93

Your letter of yesterday upset me completely. Probably you did not mean to ask me to put, I should say, 30 solid hours more work on the little paper to make it “lively”. I have written the National Resources Service, Department of the Interior of Canada for later maps, if he has them. To reproduce these maps by my method is excessively laborious. I personally trace all the detail from the 1:21/4 million map, including the one degree mesh. Some of the maps used have a two degree mesh. I bisect it. I make a similar small map with same net and draw down the detail degree by degree. I have been since June laboring on these maps. No one but myself I think would be willing to put so much labor into a job as I do. You have appliances for doing it both better and more quickly and cheaply. If you have a later map of either will you have a photostat made of say scale 1:ten million or so, precision of course does not matter? (I meant precise scale.)

I cannot put any considerable further time on the matter and would much rather print it elsewhere if you feel the 1934 date of data important. If you are right about that, the matter is one we could not possibly agree on and the only thing to do is to send me back the article. I want it published and as early as possible. It is a part of a whole. I am working toward the case of the United States. Toward that I have already

A. Cities and towns in U.S. down to size 100 (one hundred people), scale about 1:6 million, about half done.
B. Idem Canada all done, dates 1930 and 1931.
C. A rough list of the Ecumenes for all the countries of the world; very bad values but a beginning, something to correct.

A reason for my wishing this published promptly—by April cer-
tainly—even if it is not by my preferred publishers, the American Geographical Society—is that Soderlund is just producing a remarkable use of the same essential conception, which I feel is quite new and epoch-making, very lively indeed and extremely appropriate for so progressive a journal as the Geographical Review to be associated with, in his

Folkskolans Kartbok, Stockholm July, 1933

of which I will send you an account as soon as I unravel his explanation in Globen for September 1933 . . .

Jefferson sent the paper to the Swedish magazine, Geografiska Annaler, which published the article in November 1934. He stressed the value of the concept of the ecumene, distinguishing the ecumene from the territory of Canada, deftly stating his problem: “How do we estimate the amount of Ecumene? Where draw its boundaries? That is the problem of the ecumene.” Jefferson indicated two methods by which the ecumene might be delimited:

An easy first approximation may be made with the help of the best population-density map available, by rejecting its scantily settled areas. The choice of the critical density is important and arbitrary, but if the criterion is stated, corrections to taste may be supplied by readers. The writer would select 2 or 2 1/2 people per square mile, and call any population-density less than that negligible. Actually that will always involve large areas of no people at all.

Using this criterion we may throw out as unused territory two-thirds of Brazil, half of the Argentine Republic, five-sixths of Chile, a fifth of the United Kingdom and an eleventh of France. The population densities then go up, for Brazil from 13 to 40, for the Argentine from 11 to 22, for Chile from 14 to 84, for the United Kingdom from 495 to 602, and for France from 197 to 216.

A better way of ascertaining the outline of the ecumene, it seems to the writer, is to locate on a large map all population nuclei down to groups of only 100 people, marking each with a symbol that expresses number by its shape as well as its size.

Jefferson’s other concern was to define a country as a nation on its ecumene, devoid of territory owned by the state. The Geographical Review noted Jefferson’s article in the Swedish magazine in a four hundred word summary.

As was Jefferson’s habit, he had tried the idea before the Association of American Geographers, at its annual meeting at Evanston, Illinois, December 1932. His abstracted paper reads:

The essential part of a country—its people—is often intimately associated with only a part of the national territories, the ecumene, which
excludes all waste, unused and unoccupied spaces. These may vary from 18 percent for the United Kingdom to 31 for Switzerland or Japan, to 33 for the United States and 90 percent for Canada.

The ecumene is the house that enshrines the nation, the developed land owned by the nation and also lived on and used by it. All the cities are on it and the towns, even most of the villages. Almost the totality of the farmlands and forest clearing are on ecumene as well as the roads and railways. Isolated villages or isolated homes in the wilderness are bits of the country, their sites bits of the ecumene, but the wastes themselves are not parts of the country. They are merely national territory.

To determine the exact area and outline of the ecumene is very difficult. The railway map is a great help. Networks of roads of railways are always within the ecumene, though single tentacle lines may extend across the wastes. The completely drawn cities map, when it is possible to make one, is the best means of approach to an accurate delineation.

But, however difficult it may be to draw the outline of the ecumene, its entire omission leaves the map of any country unfinished.

In 1936 Jefferson produced the third revision of his text, *Man in Europe*. In the second chapter, entitled “Distribution of Population,” he used the most recent census figures to determine the annual increment of population for each European country in 1936, based on the annual rate of increase for the last ten years. This part of the chapter he rewrote for “Geographical Record” in the *Geographical Review*, under the title, “The Growth of Europe’s Population and an Estimate for 1936.” Jefferson indicated that the annual growth rate of population had political and military implication: with the map he showed total populations and annual population increase for each of the European states. The 1936 edition of *Man in Europe* also gave ample references to great cities and super cities. City size and reasons for a cities rise to eminence in population had fascinated him for many years. He was particularly interested in city growths and for several years had arranged the cities of various countries in descending order of size to emerge eventually with his concept of city primacy. “The Law of Primate Cities” was delivered before the Association of American Geographers at Cambridge in December, 1938. The Law was abstracted in the *Annals of the Association of American Geographers* as follows:

*In most important countries the largest city is two or more times as large as the next largest city, and other cities differ in size by much smaller numbers.*

All great cities have, as important factors in their growth, the pro-
ductivity of their region and its extent, as well as their situation with regard to the chief lines of movement of internal and external commerce.

Cities generously endowed with these two elements of growth are likely to be very great cities. New development of resources or acquisition of new productive areas, or new development of transportation lines that favor them more than other cities are likely to cause them a sudden increment of population.

Another very important factor in a great cities growth is its primacy among the great cities of the land—its attainment of distinctly greater number of inhabitants. The moment that happens the force of primacy, which it alone possesses, causes it to take on a rate of growth so much larger than that of any other city in the region that it shoots up to a magnitude out of the class of any rival city. e.g., at no time in the past eighty years has any city in the United States had more than half as large a population as the City of New York.

The paper was noticed immediately after its delivery on the front page of the New York Times, under the column heading, "Links New Yorker and London Cockney; Geographer calls them 'True Provincials.'" Insistence upon the cockney being England's true provincial encouraged The Times to come to the defense of cockneys and cockneyism with two articles, "Cockney Born" and "True Provincials: Cockneys and New Yorkers." In this latter column The Times amusingly confused the primate city with primitive city. The local paper of his own town, The Ypsilanti Press, and The Detroit Free Press made mention of the fact that Professor Jefferson's concept had been noticed in the metropolitan dailies, but it was The Normal College News that kept the student body and local citizenry awake to Jefferson's primate city with a reproduction of the December 30, New York Times editorial followed by discussion of the London Times articles which brought an invitation to Jefferson to address the Normal College General Assembly on the issue of the primate city. A review of this address appeared soon after it was given. So much publicity resulted in numerous groups and institutions sending requests to Jefferson for a talk on that subject. The Geographical Review noticed the paper in its summary of the 35th Annual Meeting of the Association of American Geographers:

Besides the studies on Boston, four other papers dealt with cities, either collectively or individually. Of these, perhaps the most original and imaginative was by Mark Jefferson on "The Law of Primate Cities". Professor Jefferson aimed to demonstrate the reasons why one city in each country tends far to surpass any other in size and influence.
Meanwhile, Jefferson penned the article "The Law of the Primate City," which was published in the *Geographical Review*. It was Jefferson's last article while at normal.\textsuperscript{108} Certainly it was one of his finest pieces. Of the article *Review* editor Gladys Wrigley wrote:\textsuperscript{109}

> You have put me in a quandary. My mind was firmly made up to accept NO MORE articles until I saw the glimmerings of daylight ahead—we have at least a year's supply. If "The Law of the Primate City" were not so concise I could cheerfully say "No"; if it did not fit in so well with Professor Mear's article "Postwar Locational Changes of British Industry", which goes in the April number, I might perhaps be firm, at least as regards time; but as it is, I must say "Yes" and squeeze the April Review some more.

Jefferson wrote of the concept of primacy:\textsuperscript{110}

> Metropolitan London is not merely the largest city in the world; it is more than seven times as large as Britain's second city, Liverpool, and thereby stands out alone in a different order of magnitude and significance from that of all other cities in the country.

> The finest wares are always to be found there, the rarest articles, the greatest talents, the most skilled workers in every science and art. Thither flows an unending stream of the young and ambitious in search of fame and fortune, and there fame and fortune are found. London is the kingdom's market for all that is superlative in intellectual and material productions. Its supereminence as a market runs parallel to its supereminence in size. It is the primate city of the United Kingdom.

> In Denmark the less-than-a-million capital, Copenhagen, has won greater relative primacy. It is nine times as large as Denmark's second town.

Jefferson collected statistics of city populations for the forty-four most advanced countries of the world and compared the population size of the first city with that of the second city. For Jefferson the 44 most advanced countries of the world were those that had attained the highest cultural achievement. Country selection presented no special problem to him, as he had been measuring and mapping the culture of states since 1911.\textsuperscript{111} In 18 of the 44 cases selected in 1938 he found examples of triple primacy: the first city was numerically at least three times greater than the second city. In ten cases he found examples of double primacy: the first city was numerically twice as large as the second city. In six cases the first city was half as large again as the second city.

> The only real exceptions to Jefferson's concept of primacy were the British Dominions, Spain, Italy, and Russia. Furthermore, Jefferson could explain the exceptions: the British Dominions were "able to look
“home” to London as their primate city”; Spain had divided itself into Castilians and Catalans—two capital cities emerged; Italy had not had enough time to grow since the time of her unification; while the USSR had not been able to develop a capital representative of her people in the absence of a good communications network.

Jefferson further developed the concept of primacy by insisting that the first city draws its inhabitants from all other cities and parts of the country, thus in character as well as in size expressing the national disposition more completely than any other city. It is the indigene of the city, stated Jefferson, who is narrow and limited—the nation’s true provincial.

Since 1911, Jefferson had been mapping culture for the countries of the world, using such criteria as schools, patents, cities, communications, railroad freight, foreign commerce, pieces of mail delivered per capita, telegraph, telephones, automobiles, art galleries, societies for the prevention of cruelty to animals. Each country was given a culture index that was presumed to indicate the degree of cultural attainment which that country had achieved. Satisfied with his measuring device, Jefferson proceeded to group these countries into four categories on the basis of cultural attainment: a Teutonic group, Mediterranean group, Levantine group, and an Oriental group. These culture indices enjoyed considerable popularity in the early part of the century and encouraged Jefferson to calculate the culture of cities. His investigation showed that cities enjoying a high culture index invariably had a substantial population. Thus another dimension had been added to Jefferson’s concept of primacy: the city was prime in culture and prime in number of population. This led Jefferson to state that, “A country’s leading city is always disproportionately large and exceptionally expressive of national capacity and feeling.” This was the law of primate cities, a law Jefferson asserted, by virtue of its constant recurrence the world over in “countries of age.” Perhaps it was a little unfortunate that Jefferson, in his enthusiasm for the concept of primacy, should have adopted the term law—a term which the social scientist has concisely defined today as a statement of a relation or sequence of phenomena, invariable under the same conditions. But the enunciation of the concept was new to urban theory and has been frequently noted in the years that followed. “The Law of the Primate City,” the product of many years thought, was not the last of his population studies. In 1941 for the annual meeting of the Association of American Geographers, Jefferson wrote a paper entitled, “The Rift in Our Population,” abstracted, but probably never sent to program officials.¹¹²

¹¹² In 1930 for the first time in the history of the United States a group of
our people—those under three years of age—was found to be 207,000 smaller than the same group of ten years earlier. In 1940 this rift in the population between a small diminishing and a large increasing part had advanced to include all under age thirteen. There were about three million fewer individuals under thirteen in 1940 than in 1930 and now more than a fifth of the population was affected. There were 28 million individuals under thirteen and 103 million thirteen or more years old. The younger 28 million were 3 million fewer than in 1930 and the 103 million older people twelve million more numerous, masking the loss of children in the net gain of 9 million for the whole population.

These 13-year-olds of 1940 were three years old in 1930 and will be 23 years old in 1950. Unless there is a new influx from Europe in the present decade we may expect those under 23 in 1950 to be fewer than in 1940. They number about 51 million now, say 39 percent of the population. They may diminish as much as the remaining 80 million increase and bring us near a stagnant population.

A population that was increasing (1920-1930) by 17 million in a decade should produce many more children in 1930 than in 1920, but about 1927 the fall in the birth-rate caused a greater defect of births than the increased number of parents could match. As this was not true in 1926 and earlier, the number of those 14 or more years old in 1940, is greater than in 1930. If the process goes on as now and the total population has begun to decline, in 1950 or 1960 we may say that the decline began to begin in 1927-28!

A practical subdivision of the population by age at any date is into five groups—

- children (under age 5)
- young in training (5 to 19)
- adventurers (20 to 39)
- prime of lifers (40-69)
- pensioners (over 70)

At present more than half the people are adventurers or primers and they are still increasing in number. They do the country's work.

The paper had been composed and typed, but was not read, owing to a bout of influenza which Jefferson contracted and his concern for the journey to New York. At this meeting Griffith Taylor delivered his Presidential Address, “Environment, Village and City: A Genetic approach to Urban Geography”; Jefferson as chairman of the Nominating Committee of the Association of American Geographers had proposed Taylor's name for the presidency.

This chapter has in no way attempted to portray the larger influence of Jefferson's population studies; it is a summary of the more tangible
evidences he left behind of his thought concerning people and their distribution. The description of his thought is recorded chronologically so that the reader might parallel Jefferson's achievement with ideas and thoughts of the geographic and other disciplines. Jefferson's population studies are best understood in this manner. He followed no preconceived program of thought, but progressed from one idea to the next, not duplicating the work of others, but sometimes supplementing it, sometimes modifying it, sometimes directing it. His perpetual concern was not to insist on a relationship but to persist with the possibility of a relationship. He lent his work to a subject matter which later came to be known as urban geography, without his name being essentially attached to most of the ideas he contributed. Thus his visible accomplishment in population studies extends over a period of forty years and from the Normal School classroom to the front page of the New York Times, from an obscure book review in the pages of The American Schoolmaster or a fugitive collector's item such as "The Distribution of People in the United States in 1910—As Indicated by the Distribution of the Cities," to the easily available pages of the Geographical Review.