How American Cities Grow

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mette valley; the Valley Region includes these two valleys and the minor valleys in southern Oregon; and the Cascade Region is the Cascade Mountains from the foothills east of the valleys to the crest of the range, which is the eastern boundary of the Pacific Province. The Coast Region has a heavy to excessive annual rainfall. The Valley Region has a smaller annual rainfall than either the Coast Region or the Cascade Region. The Cascade Region has an annual rainfall which is between that of the Valley Region and that of the Coast Region in amount; this region has more snow than the Coast Region.

The foregoing climatic provinces have been made in an attempt to divide the western United States in such a way that areas with similar climatic conditions shall fall within the same general group and that areas with essentially different climatic conditions shall be kept separate. The boundaries are probably subject to considerable readjustment and perhaps other divisions would be recognized. From the use which has already been made of these divisions they seem to be more logical and of greater practical value for the description and study of this portion of the country than any of the previous groupings.

HOW AMERICAN CITIES GROW

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Astonishing are the differences in the growth of American cities, and astonishing, too, is the distinctness with which that growth responds to the nature and extent of each city's sustenance space, its tributary district. New York, the colossal, stands without peer, towering above all other cities in size, just as it stands apart in the service it is able to render to a continent. Only the economic and commercial capital of English America could stand so alone. Only the unique Mohawk gap in the Appalachian upland, that parts the Mississippi from the Atlantic coast, has made possible New York's pre-eminence as the market of a hundred million people. Fig. 1 shows this fitly.

At no time in the last seventy years has any other American city had half the population that New York has had at the same time. The six cities shown in Fig. 1 are the greatest in North America. Any others—there were fifty that passed the hundred thousand mark in 1910—would have the lines that show their

growth all contained in the lower right-hand corner of this diagram, below the curve for Cleveland. In each of the diagrams the vertical divisions mark the decades of somewhat more than a half century.

New York, Chicago and Philadelphia are the giants among our cities; Boston, St. Louis, Cleveland, Baltimore, Pittsburg, and Minneapolis-St. Paul, our great cities, with more than half a million each. New York's growth has been that of the American nation. It has gained with every American conquest of nature or of men. The Louisiana Purchase augmented the territory tributary to it, the Mexican war and the addition of Texas and California enlarged it again. Every forest, every mine in the country has had significance for New York, but, more than all else, the progressive occupation of American soil and the bringing of it under cultivation have fostered this city's growth. For our country has been growing up through a period of unparalleled development of means of communication; and all these lines of communication—rail, river, lake, or canal—bring to New York the products of a continent.

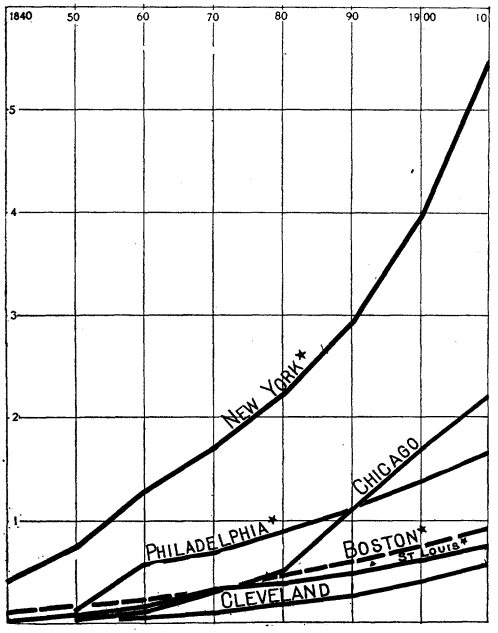

FIG. 1—The six giant cities of English America, showing the millions of people in each in every decade from 1840 to 1910. The vertical divisions on this diagram mark the decades; the horizontal lines millions of people. On the diagrams that follow, the horizontal lines stand for *hundreds of thousands*, thus greatly magnifying the values for the lesser cities. It is only on this diagram, therefore, that we get any conception of the overwhelming magnitude of New York, which has added to its population in every decade, for the last four, people enough for a larger city than Cleveland, and, in the last decade, people enough for a city nearly as large as Philadelphia. All of these, except Chicago, are of *vigorous growth*, i.e., they add more people in each decade than in the previous one. Cleveland is the finest type of this, as seen better on Fig. 2. The stars indicate that the cities represented are *geographic*, including the whole citified settlement at the spot. St. Louis* includes East St. Louis, Ill., Philadelphia* includes Camden, N. J., Boston* includes Cambridge, Somerville, Chelsea and Brookline, and New York* Jersey City, Hoboken and Newark, N. J.

How effectively the Appalachians bar other eastern cities from easy intercourse with the continental hinterland we see by the curves of growth of Boston, of Philadelphia, and, most of all, of

Baltimore. Cities on our inland waters flourished amazingly with the early development of river and lake navigation, only to suffer an inevitable check as the hand of railroad control choked out the life of water-carriage, as happened to Cincinnati forty years ago and to Chicago during the last two decades in much less degree. The diagrams show all these things. But while railroad-carriage has always gotten the better of water-carriage, and while the railroad centers have thriven with a vigorous growth that river and lake towns have been unable to maintain, all ways of transportation have led to New York, and New York has prospered without pause. Once only has the growth of the city faltered—in the decade of the civil war. New York added fewer people to her population in that decade than in the one before—543,000 from 1850 to 1860, but 410,000 from 1860 to 1870. It is in keeping with the national character of the city's growth that only a national catastrophe has been able to set it back. Chicago and St. Louis, on the other hand, had a boom in the war decade. St. Louis has never since equalled the growth of those ten years. Boston and Cleveland grew steadily and unaffected through the war. Philadelphia suffered a much greater check than New York and, from 1870 onward, has had a much more modest type of growth than its vigorous neighbor, corresponding to a limited sustenance space.

Examination of the growth curves of all large American cities shows that their economic history is accurately portrayed in these lines. New York's curve suggests a criterion of vigor in city growth. If a city added the same number of people, decade after decade, its line would be a straight one, ascending steeply if the amount was large, gently if it were small. To get a curve concave upward, like New York's, it is necessary *to add more in each decade than in the one before.* That is a simple criterion of vigorous growth. The most perfect examples are the smaller cities—Cleveland, Columbus, Dayton, Indianapolis, and Bridgeport, Conn.—none of which shows any such setback as New York's check during the civil war.

The New York of these figures is the *geographic* city, all the continuous settlement about the port at the Hudson mouth, including the Jersey shore. Eleven cities, all marked in this paper by asterisks, receive similar corrections to the incomplete data of the usual political city. Thus Philadelphia* includes the Jersey shore overflow at Camden; Cincinnati* the overflow into the Kentucky settlements of Newport and Covington across the Ohio. The twin cities, St. Paul and Minneapolis, are taken as one, and also Duluth

and Superior. These combinations will be again referred to in speaking of Oakland.* Thus conceived, New York* has had the following population numbers since 1840, given in *thousands,* that is, omitting three ciphers:

1840	'50	'60	'70	'80	'90	1900	'10
411	743	1286	1696	2200	2896	3949	5452

The decennial increments have been:

332	543	410	504	696	1053	1503

Now, except for the decade of the civil war, these increments are larger for each decade, and that is true as far back as 1810. The increment of the decade *before* the war was not reached again for twenty years. For Cleveland the equivalent increases have been:

1840	'50	'60	'70	'80	'90	1900	'10
11	26	50	67	101	121	179	

smaller, since Cleveland is not the giant among cities that New York is, but always increasing, even through the war. This makes Cleveland a perfect example of vigorous growth.

An extreme form of this vigor is noted in the cities of the New Pacific: Los Angeles, Oakland,* Portland, Seattle, Vancouver, and Spokane, which have nearly doubled their population two decades running! *Exuberance* is the only name appropriate to a vigor so great. On the other hand, failure to add to a city's population in one decade as many as in the previous one gives an upward convexity to the line, such as we see on the New York diagram for 1850 to 1870, which we attributed to the war. The habit of doing this is a habit of *faltering* or *halting* growth. It is still growth, and may be good growth, but it must indicate less of intrinsic vigor than the city has earlier possessed. Some of our greatest cities show this halting growth. Such are Chicago and other lake cities for the last two decades, under the gentle but effective throttling of lake transportation by the railroads, and such, in even greater degree, has been the fate of the river cities ever since the civil war. The halting growth of Chicago is plain on Fig. 1.

On Fig. 2 are examples of all the different types—the vigorous Cleveland and Columbus, the exuberant Los Angeles, the halting Cincinnati, on the Ohio, and its singular companions, Albany, the political, the feeblest growth among American cities, and Washington, since 1874 a disfranchised city. All but these last two are types of groups of cities that are now to be described, but the reality of the contrasts in growth is best seen on bringing the types together on the same scale in one diagram.

Apart from Albany, the only large city that has actually lost population is Memphis, with 40,226 in 1870 and 33,592 in 1880. A severe epidemic of yellow fever in the seventies killed thousands of the people, bankrupted the city, and destroyed its government so completely that state and nation had to step in to restore order. Two other cases of loss are kept on the records of the United States census, though both are well known to be false returns based on a misguided spirit of local patriotism. They are Omaha, Neb., and St. Joseph, Mo. Omaha was reported to have 140,452 in 1890 and 102,555 in 1900. The true figure for 1890 was probably 60,000 or 70,000. St. Joseph was returned at 102,979 in 1900 instead of

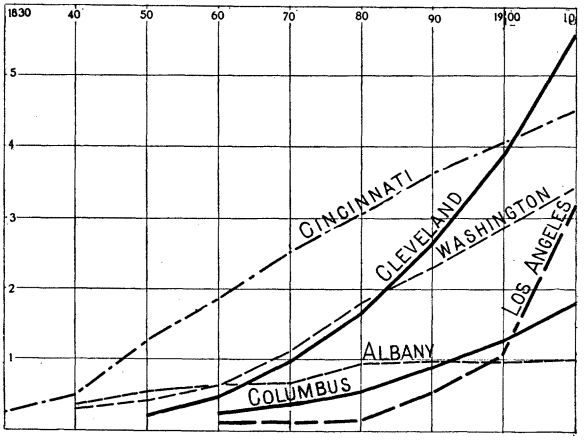

FIG. 2—Shows the three types of growth of American cities from 1840 to 1910. The vertical partings mark the decades, the horizontal lines the hundreds of thousands of people. Los Angeles typifies the *exuberant* growth of the New Pacific cities, almost doubling their population two decades running. Cleveland and Columbus illustrate the *vigorous* growth of cities of the humid east, adding more people to their population in each decade than in the previous one, and thus giving a curve concave upward. Cincinnati is a typical river city of *halting* growth, frequently adding fewer people in one decade than in the previous one, and making its curve convex there. Albany's curve shows that it does not suffice for city growth to be the capital of a great state. Even Washington, since its disfranchisement in 1874, has grown but poorly.

some 65,000. The exact figure cannot be known in either case, but there was no loss. There certainly was growth, and an estimate is better than the known overcounts, although these are still printed in the "Abstract of the Thirteenth Census" at p. 70.

Vigorous Cities. A healthful city must increase in size. New births provide for that, and in a new country like ours it should constantly draw on the new births of the country districts, whose life it shares and crowns. Progressive occupation of the land, which must go on for years yet in most of our country, will give

more sorting, distributing, and manufacturing for the city to do and call for immigration from older districts. And the larger the city the larger the growth. There cannot fail to be more births in a city of 100,000 than in one of 90,000, and the larger city must afford greater opportunity for employment and entertainment of newcomers than the smaller one. More people will come to it. This gives the upward curve of vigorous growth. But for occasional lapses, such are the curves of thirty of the fifty-odd American and Canadian cities. I have named six of them already, the most perfect types. The others are: Birmingham, Ala.; Atlanta, Ga.; Minneapolis-St. Paul, New York,* Philadelphia,* Boston,* Detroit, Montreal, Toronto, Kansas City,* Rochester, Denver, Omaha,* Worcester, Syracuse, New Haven, Scranton, Richmond, Va.; Paterson, N. J.; Fall River, Mass.; Grand Rapids, Mich.; Nashville, Tenn., and Providence, R. I.

In the main they are the cities of the humid east. Here abundant rainfall has enabled prosperous communities to grow in response to the need of cities as manufacturing and distributing centers. They have grown variously. Some are small, like Grand Rapids, hemmed in between Detroit and Chicago; Dayton, between Columbus and Cincinnati;* Worcester, New Haven, and Bridgeport, between Boston* and New York,* and Richmond and Nashville, cities of the undeveloped south. Some have passed 500,000, like Montreal and St. Louis,* neither of which has a city of 100,000 population within 200 miles; Boston* with nearly 1,000,000 people, and four cities of 100,000 within fifty miles; and Detroit and Cleveland on the lakes near the population center of the land. Two are the giants, New York* and Philadelphia,* in the midst of that inner lowland of the Atlantic coast where dwell the greatest mass of our people at the gates of the continent. All these cities of the humid east have the habit of adding more in each decade than in the last one.

The habit has had its interruptions. Attention has been called to the effect of the civil war on New York* and Philadelphia.* The decade of the nineties saw a check in the city growth of yet wider effect. The panic of 1893 was perhaps the cause. The effect was strong in Canada and the west. Toronto, for instance, shows the following numbers in *thousands:*

1860	'70	'80	'90	1900	'10
45	59	96	181	208	376

and decennial increments:

14 37 85 27 168,

always increasing the gain until 1890-1900. Similarly, Montreal; so the New South of Birmingham and Atlanta and Richmond; so the New Pacific cities; so Denver and Kansas City,* and Omaha* and St. Paul-Minneapolis; so Rochester and Syracuse. But Boston,* New York* and Philadelphia* show no sign of it. The whole population of the United States, however, shows something quite similar in its growth. This has been in millions:

1790–1800	1800–10	'10–20	'20–30	'30–40	'40–50
1.4	1.9	2.4	3.2	4.2	6.1
'50–60	'60–70	'70–80	'80–90	'90–1900	1900–10
8.2	8.4	10.3	12.8	13	16

These figures show a vigorous growth, steadily increasing with each decade, but in the sixties and nineties the increase was very small. While it is extraordinary, it appears to be true that the panic of 1893 set back the growth of the United States exactly as much as the civil war did. In immigration figures we see the same check. There were nearly 3,000,000 immigrants in the seventies, over 5,000,000 in the eighties, but immigration fell to 3,700,000 in the nineties, to pass 8,000,000 in the last decade. It is not strange that sixteen cities grew more slowly in the nineties than before. It is not so clear why the effect was felt so differently in different parts of the country. Taken as a whole, the humid north held its own through the decade, and the humid south grew faster than usual. So this check, or one at the civil war alone, has not been counted against the regularity of a city's growth. In general, a single exceptional decade has been overlooked in any city's record. St. Louis had one in the seventies, so did Cincinnati and Louisville, possibly because of an influx of refugees from the south during the war decade that was not maintained later, or perhaps the mere activities of western bases of supplies during the war gave them a war-time activity that they lost later. It was quite as much increase in the war decade as falling off afterward that was noted. The explanation is for the local historian. It was a single decade and is overlooked. A similar setback befell Worcester and Fall River, Mass.; Paterson, N. J., and Grand Rapids, Mich., in 1900. Boston* has had two separate checks of small amount, adding 140,000 in the seventies, 129,000 in the eighties, 169,000 in the nineties, and 145,000 in the decade last past. Four other cities—New Haven, Lowell, Mass., Providence, R. I., and Syracuse—have had greater irregularities, but small ones. None of these diminish their increments two decades running, however, and all are accounted vig-

orous. Their curves reveal no systematic unfavorable influence. All have a general upward convexity.

Exuberant Cities—Pacific. While this great group of cities of the humid east has been making a steadily augmenting growth the Pacific cities have made for decades a growth that is simply astonishing. For, adding from 50 to 100 per cent. in the nineties, in the last decade they have almost trebled in size. I include with them Winnipeg in Manitoba, so similar has been its growth. The thousands of people have been:

	1890	1900	1910
Los Angeles	50	102	319
Seattle	43	81	237
Oakland*[1]	65	97	214
Portland, Ore.	46	90	207
Winnipeg	25	41	135
Spokane	20	37	104
Vancouver	14	26	100

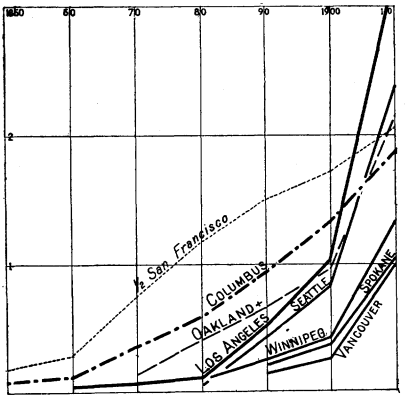

FIG. 3—Exuberant cities of the Pacific Coast. Shows the hundreds of thousands of people in each since 1860. Columbus has been included to show the contrast of exuberant and vigorous growth. Portland, Ore., has been omitted, as its figures are so like those of Seattle, to avoid crowding the lines and rendering them obscure. Winnipeg is included as belonging to the type, though not on the Pacific. San Francisco's data are also put on the map, *half size*, to bring the curve near the others for the smaller cities. It is seen that San Francisco has not the exuberant growth of its neighbors.

This is, I believe, unparalleled growth. One looks for such expansion only in cities newly come to their first 100,000, yet Los Angeles has carried it easily to 300,000. The nearest parallel that I know is Sydney, New South Wales, with 100,000 in 1881, 488,000 in 1891, and 621,000 in 1911. But there the second decade utterly failed to maintain the promise of the first one. Los Angeles, adding 52,000 in the first decade and 217,000 in the second, grew by 103 and 212 per cent. respectively. This surpasses all the others. Seattle added 88 per cent. and 194 per cent. in the two decades, Oakland* 49 and 121, Portland 95 and 129, Winnipeg 64 and 230, Spokane 85 and 183, and Vancouver 86 and 285.

Is it not singular that all these cities grow so similarly? Seattle

[1] Oakland* includes Berkeley and Alameda, the whole settlement on the east shore of San Francisco Bay.

and Los Angeles are 1,000 miles apart and their environments have very strong contrasts, yet each, and all their neighbors, show strong growth in 1890-1900 and an immense spurt in 1900-1910.

I have referred above to the crisis of 1893 as retarding the growth of certain eastern cities. Had it perhaps some influence on these Pacific communities? The effect of 1893 was curiously local. Taking account of the growth of the *total population,* instead of that of cities only, the humid north grew 20 per cent. in the eighties, 20 per cent. in the nineties, and 19 per cent. in the first decade of the new century. That region knew no setback in 1893. The humid south in the same periods increased 15, 29 and 20 per cent., *faster* through the nineties than before or since, so there was no effect of 1893 there. The west north-central states, however, added 43, 16 and 12 per cent. in these three decades. Here the growth of the nineties was barely a third as great in percentage as in the eighties, and the last decade had a growth still smaller. Growth in the mountain states was 100, 42 and 53 per cent., a great check in the second decade, with a little recovery since. But the Pacific states grew 73, 26, and 75 per cent. So British Columbia added in the last two of these decades 83 and 120 per cent. and Manitoba 66 and 79. Now cities, as is well known, must and do, under modern conditions, grow faster than their countryside. New York,* Cleveland, Columbus, Dayton, Bridgeport, and Boston* added an average of 50, 38, and 37 per cent. in the same decades that the humid north added 20, 20 and 19. That is, the cities grew fairly twice as fast as their region. Our five Pacific cities grew, on the average, 84 and 166 per cent. in the last two decades, to the region's 26 and 75 per cent., almost three times as fast as the region. It appears that the Pacific cities were held back in their exuberance by the panic of 1893, like the whole coast region, and also one may fairly wonder whether they are not growing in advance of the region's city needs.

Many cities have had a great growth for a single year, at one time or another. Philadelphia,* in the decade 1850-60, grew from 131,000 to 580,000. Minneapolis-St. Paul, in the decade after 1880, grew from 88,000 to 298,000. Birmingham, in the last decade, from 33,000 to 133,000, and Atlanta from 90,000 to 155,000. But up to the present none but the Pacific cities have kept it up, though Birmingham gives signs of it. The growth of the Pacific cities is surprising for its persistence through two decades. Most phenomenal is perhaps Vancouver, with 86 and 285 per cent. The single taxers will say this great increase is due to the exemption of improve-

ments from taxation in that city, in which case the next census must show it still in the lead.

Since 1883 all the Pacific region has been within easy reach of railroads, and the country has been open to the resources of people and money from the east. While hitherto the cities of the coast valleys had grown in response to the needs of the people on the land, the cities now became centers from which the development of the country proceeded. The resources of the coast were great, and of a sudden they became accessible to large numbers of people familiar with pioneering, and this fact did not fail to give a great impetus to settlement. Nowhere have the Pacific valleys, occupied by farmers, the same density of population to the square mile as many parts of the east, and in the more arid portions they never can have such density of population, but the taking up of the eastern land was slower because the means of occupying the land had to be created as it was occupied. Forests had to be cut away and roads and railroads built, usually with no other resources than those of the region to be served. The Pacific railroads, on the other hand, were made possible by the government of the United States, that is, chiefly by the people of the humid east. At the time of their construction the Pacific coast could not begin to pay for them. It is inevitable, therefore, that the present great growth of the coast cities will be followed by a more leisurely progress.

The active growth of Birmingham and, in less degree, of Atlanta and Richmond shows something of the same development in the "New South." What is new in the south is the putting into use of opportunities that have long existed there. People and capital and means of communication were already there, but the material resources were not developed, which really means that they were not realized. The expansion that will follow on their actual use is bound to be sudden and great. Further, the life of the south has been disproportionately agricultural. She has allowed too many of the city processes in transforming her raw products to be carried on in northern or European cities. But these processes are profitable and they profitably occupy the surplus growth of the country population, while the cities they maintain serve as cultural foci, create manifold wants and stimulate the desire to satisfy them. New Orleans is to-day the only city of over 135,000 people south of Louisville. There existed, therefore, and there exist to-day all the conditions for the growth of a group of large cities in the south, but economic conditions, largely inherited ones, have prevented these cities from springing up. This they will do presently. But

here the presence of the negro, in low economic status, must operate against exuberant growth.

Between 1850 and 1860 the discovery of gold gave a similar impetus to San Francisco. The city had 35,000 people in 1850, and the subsequent censuses were 57,000, 149,000, 234,000, 299,000, 343,000 and 417,000. It is now a very great city, with little short of 500,000 people, but its growth was never that of the New Pacific cities. The thousands gained in successive decades are 22, 92, 85, 65, 44 and 74. That is, in every decade from 1860 to 1900 it gained fewer than in the decade before, a slackening growth, though in the last decade, despite the disaster of the earthquake, it has made the best growth of forty years. The percentages of San Francisco's growth have been 63, 161, 57, 28, 15 and 22. The first two decades, 1850-70, tended towards the exuberance which the New Pacific cities show nowadays. As we have said above, the Pacific cities will not maintain their exuberance; it is of youth. We might regard San Francisco's later figures as of older type, premonitory of what is in store for the newer towns. It may, however, be questioned whether San Francisco stands in so vital a connection with the productive agricultural lands of the New Pacific as the other cities; whether the future great central city of California will not be Oakland,* at the natural railhead on Pacific waters, rather than at San Francisco, across the bay. As long as California was chiefly in touch with the rest of the nation *by sea,* San Francisco was its natural market city. With the railroad came the development of settlements east of San Francisco Bay.[2]

Oakland* is the natural market for the Great Valley, its natural supplying place. What it now lacks in depth of water the dredge may readily give it. It may naturally be questioned here why San Francisco has not had Oakland, Alameda and Berkeley counted with it, just as Cambridge, Somerville, Chelsea and Brookline are counted with Boston. Oddly enough, it does not at all help San Francisco's curve to include all these cities with it. San Francisco is so much the larger that Oakland* modifies its figures but slightly. The combined city loses through three decades instead of four, and its growth is still halting. The thousands in the combined city have been 35, 57, 161, 274, 364, 440 and 631; the decennial increments, 22, 109, 113, 90, 76 and 191; the percentages of growth, 63, 183, 70, 33, 21 and 43, amazingly like those of San Francisco alone.

[2] Readers hardly need be informed that San Francisco lies on the eastern, landward side of the peninsula that encloses the bay of the same name on the south side of the Golden Gate, while Oakland, Berkeley and Alameda lie on the eastern shore of the same bay across four miles of rather shallow water.

The fact is San Francisco is *not* showing the vitality of a Pacific coast city, whether you count it alone or together with Oakland,* but Oakland* *is* showing exuberant life, and is apparently destined presently to outstrip her elder sister. Against this result it may be expected the whole power of the wealth invested in San Francisco will be exerted, but it will only hamper a growth it cannot prevent. Oakland* is to San Francisco what Manhattan is to Brooklyn, the city of the mainland, and San Francisco has no good equivalent for Long Island for sustenance space behind it. It has with it the weight of tradition and of fixed institutions, great banks and trust companies, great hotels and the United States mint. But the importance of these beside the true function of a city—to serve well its countryside in the present—has been overestimated. We shall find another example of this in the case of Washington.

Composite Cities. Before going further with our study it is time to give a little more attention to the *composite* cities. All studies of cities and city-growth involve some consideration of the meaning given to the word "city" in each case. I have gone into this more fully in "The Anthropography of Some Great Cities."[3] We cannot be satisfied with the official city in studies that cover various dates, for we find at once that the official cities themselves change from date to date. New York, for instance, took in Brooklyn in 1898. Were there really two distinct cities up to some moment in that year, and after it one? Of course not. Nothing happened in the real, essential life of those cities in the year or at the date cited. All that happened then was that a legislature and two city councils first accepted as a fact what had been one for a long time, the essential unity of the two places as parts of a great seaport. So to-day there are many unities of city groups, real but still unrecognized by governing bodies, like Jersey City and Hoboken with New York. A state boundary in this case makes much difficulty, for the law, if not purposely hostile to change, at least makes no provision for it. If Boston's growth be looked up we learn that it added to itself in 1868 Roxbury, in 1870 Dorchester, and in 1874 Brighton, West Roxbury and Charlestown. But even better grounds than moved the governing bodies to make those changes now demand the inclusion of Cambridge, Somerville, Chelsea, and Brookline in the essential civic unit at the mouth of the Charles. All the starred cities include more than the official cities of the same name, on the ground that we ought to include all the continuous area occupied with citified houses and buildings. Are our results what they

[3] *Bull. Amer. Geogr. Soc.*, Vol. 41, 1909, pp. 537-566.

are because of proceeding thus? No, for the official cities give in each case much the same conclusions.

Some light is shed, however, on the participation of the various city parts in the community life by an examination of growth of the component parts of these cities. The composite cities are:

	Number of people in geographic city	Number of people in official city	Percentage by which geographic city exceeds official city
New York	5,454,000	4,766,000	14
Boston	913,000	670,000	30
Philadelphia	1,643,000	1,549,000	6
St. Louis	745,000	687,000	9
Cincinnati	453,000	364,000	25
Minneapolis-St. Paul	516,000	301,000+215,000	
Kansas City	331,000	248,000	34
Louisville	234,000	224,000	4
Omaha	180,000	124,000	45
Oakland	214,000	150,000	43
Duluth–Superior	119,000	78,000+40,000	

In its growth during the last century official New York has all the characteristics of geographic New York: enormous growth, steadily progressive, except for the war decade. Manhattan borough, taken alone, too, shows the same characteristics, adding the following numbers of thousands in successive decades since 1850: 298, 128, 223, 276, 401 and 481. At the same dates New York* added 543, 410, 504, 696, 1053 and 1503. Turning these into percentages of the population of each city or city part at the beginning of the decade we have:

Manhattan: 58, 15, 23, 24, 28, 26; New York:* 42, 24, 23, 24, 26, 27,

an almost identity of growth. It is seen that Manhattan suffered more than the combined city by the war, for its growth for the war decade was 15 per cent., after 58 in the decade before. New York* only declined from 42 to 24. That Manhattan was the part of the combined city most to feel the effects of the war is confirmed by the further fact that Brooklyn's growth shows no sign of any effect at all: for Brooklyn added, in the same periods, 140, 141, 179, 239, 328, 468, one of the most steadily progressive growths in the country, not even excepting Cleveland and Columbus. Official Boston, too, grew like the geographic city, the thousands added since 1850 being: 41, 72, 113, 85, 113, 110 in the official city, and 65, 99, 140, 129, 169, 145 in the geographic one. The same two checks in growth appear, if of slightly different values. The same thing is true in other cases. Duluth-Superior has components too small to yield significant data and the exaggeration in the census

figures for Omaha in 1890, while capable of fair correction by estimate, give us no data reliable enough for study.

The treatment of Minneapolis and St. Paul as one city is perhaps unwarranted, but investigation shows that each component behaves like the sum of the two. The cities do not cover the ground continuously, though they certainly will do so in the future, but each draws sustenance from the same countryside, and their increase has been singularly parallel, their decennial growths having been since 1870:

Minneapolis	34,000	118,000	38,000	98,000
St. Paul.....	21,000	92,000	30,000	52,000
Combined city.....	55,000	210,000	68,000	150,000

or in percentages:

Minneapolis	261	251	23	48
St. Paul.....	105	224	23	32
Combined city.....	170	229	23	41

The Halting River Cities. Baltimore has singular hesitancies in its growth. With 63,000 in 1820 Baltimore has added in the decades since:

(1820+) 18,000, (1830+) 21,000, (1840+) 67,000, (1850+) 43,000, (1860+) 55,000, (1870+) 65,000, (1880+) 102,000, (1890+) 75,000, (1900+) 49,000.

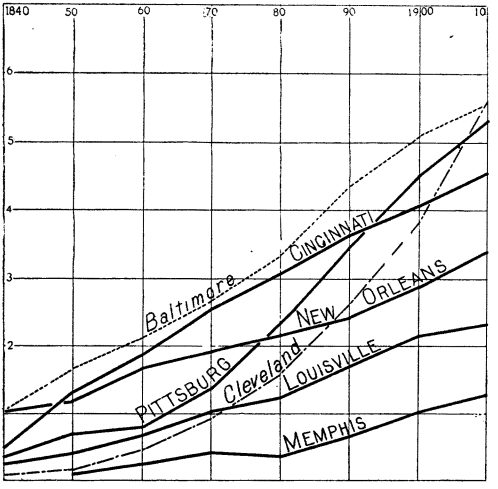

FIG. 4—The halting growth of river cities. Shows the hundreds of thousands of people in our river cities at each decade since 1840. Baltimore is included as of the same hesitating growth, and Cleveland to facilitate comparison with vigorous growth. The characteristic of these curves is the frequent occurrence of upward convexities, which indicate decades in which the city grew less than in the decade before.

Twice — in the forties and eighties — the growth was larger than for several decades after. The growth of the forties was 66 per cent. of the population in 1840, the largest *percentage* growth Baltimore ever had. This wavering of Baltimore's growth is much like that of the river cities.

It is notable that all of them except New Orleans grew vigorously through the civil war; and further, that since 1890 Baltimore has begun a definite decline

and New Orleans a definite advance. But the proper river cities are Pittsburg, Cincinnati, Louisville, Memphis, and New Orleans. All are characterized by irregular growth. Cincinnati added 84,000 to her population in the fifties, and has never equalled it since. Her next best growth was 68,000 in the seventies; next to that 58,000 in the nineties, followed by smaller numbers. In the nineties Louisville added 48,000 and Pittsburg 109,000, records that neither of them has equalled since. New Orleans's great growth was in the forties—56,000. Only in the last decade has she again come so near it as 52,000.

In thousands the decennial increases have been since 1830:

	1820–30	'30–40	'40–50	'50–60	'60–70	'70–80	'80–90	'90–1900	1900–10
Pittsburg	..	..	37	10	61	96	109	107	82
Cincinnati*	..	22	84	57	68	50	58	40	50
Louisville*	..	..	22	25	33	22	48	45	18
New Orleans.....	19	56	14	53	22	25	26	45	52
Memphis	..	..	..	14	17	(—6)	30	38	29

Perhaps Pittsburg is the most vigorous of these cities, the seat of a great modern steel industry, highly developed, protected by a high tariff and profitable. Yet in each of the last two decades it has added fewer people than in the one before. If the transference of river traffic to the railroads had any part in Pittsburg's wavering it must have been in the fifties, when the increment fell from 37,000 to 10,000. But Cincinnati* and Louisville* are the striking examples with their many fluctuations, standing, as they do, near the vigorous Indianapolis, Dayton and Columbus, which *lacked* their special advantage (!) of water transportation. Indianapolis and Louisville* had each 234,000 in 1910; their increases for the last half century have been:

	LOUISVILLE*	INDIANAPOLIS
1860–70.....	33,000	28,000
'70–80.....	22,000	27,000
'80–90.....	48,000	30,000
'90–1900.....	45,000	55,000
1900–'10.....	18,000	74,000

Cincinnati,* too, after a great addition in the fifth decade, was a good deal set back in the sixth. Never again has she added as many people as in that decade—1840-50. Is the check again, as at Pittsburg, due to decline of river traffic under the attack of the railroad? The civil war, as at Pittsburg, saw Cincinnati* readvance in population, but it is surely remarkable that a city now of nearly 500,000 has not equalled that growth in the forty years since. The growth of the city is really small: 19, 19, 11 and 12 per cent. in each of the last four decades, where Pittsburg, with all its flourishing steel industry, had 72, 46, 31 and 18 per cent. Louis-

ville gained well during the war, fell back in the next decade, doubled her gains in 1880-90, then fell off again and added less than half as many people in the last decade as in 1890-1900.

Meanwhile all the gains are small. Owing their size and significance to their position on the Ohio, the growth of the river towns is in every case distinctly inferior to that of towns away from it. New Orleans combines with her character of river town that of seaport, shipping a considerable part of the cotton crop of the south. Greatly set back in growth in 1840-50, when she added less than two decades earlier, she grew well in the next decade, in which both Pittsburg and Cincinnati* had their growth checked so strongly, but still adding less than in 1830-40, which, indeed, she has never again equalled in fifty years. In the last four decades, in which New Orleans has been putting on a progressive aspect, her percentage growth has been 13, 12, 19 and 18—extremely small figures. The war decade naturally checked the growth of New Orleans greatly and added to the growth of the northern river cities. Many northern cities, it will be remembered, were not affected at all by the war, Chicago and St. Louis being advanced by it in population, while Manhattan and Philadelphia were checked.

The Halting Lake Cities. If we estimate the *percentage* gain of the river cities for the past three decades we find it averages 42, 29 and 17 per cent., a very small amount, Louisville* having but 8 per cent. in the last decade and Cincinnati* 12 per cent. A group of cities on the Great Lakes had fairly twice this growth, averages of 80, 56 and 36 per cent. in the same period. These are Chicago, Milwaukee, Duluth-Superior, Toledo and Buffalo. They are active cities and their growth is strong, yet with each of them the growth of 1880-90 was greater than they have attained since. In general they gained fewer people in each of the succeeding decades. Cheap water transportation is an important feature in the development of these lake cities. It was more important obviously in 1880-90 than now. Duluth-Superior, for instance, was created in the eighties, for the handling of the Mesabi iron ores, but its growth to 45,000 people in the first decade has not been equalled since; similarly with each of the other lake terminal cities. For the railroads, notably in the last decade, have succeeded in destroying the advantages of water-carriage by taking it into their own control. The railroads now own 64 per cent. of the line tonnage operating on the lakes and absolutely "control the through package freight from the western gateways to the eastern seaports via Buffalo." Tramp freighting

is made profitless by charging higher rail rates east on all goods that have been carried on the lakes. Thus oats can be carried from Chicago to Buffalo by tramp steamer for 3 cents per 100 lbs., against 6½ cents by rail. But the railroads have been asking 14 cents from Buffalo to Philadelphia on oats that *came by water,* against 7½ cents on oats that came to Buffalo by rail! Detroit showed the halting growth of the other lake cities until about 1906, when the automobile industry took its great growth. From that time on her growth has been very vigorous, as appears on Fig. 5.

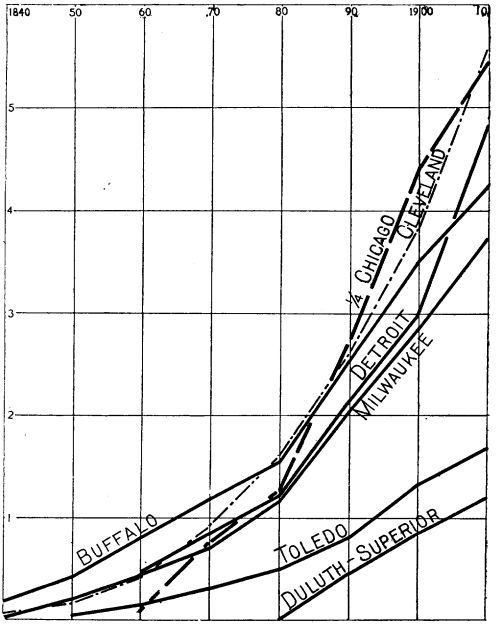

FIG. 5—Recent check in growth of the lake cities. Shows the hundreds of thousands of people in each since 1840. Chicago has been taken a quarter of its size to get it on the same diagram with its much smaller neighbors. Its *rate* of growth is not thereby changed. The special feature in all but Cleveland and Detroit, which are of *vigorous* growth, is a spurt of growth in 1880, which has been slackening up ever since Detroit shows the same tendency up to the beginning of the recent development of automobile factories. Apparently, lake navigation had a great expansion in 1880, and has been suffering from atrophy since.

Cleveland, as the same diagram shows, has not shared in these movements. Cleveland is a terminus of lake traffic only for iron ores from Duluth for Pittsburg, which is wholly in the control of the steel and iron interests, with which the railroads have not interfered.

It must become evident from these diagrams that transportation monopoly has not merely profited individual corporations unduly, but that it has seriously checked the growth of great cities.

The increments of all the lake cities in thousands since 1870 have been:

	1880	1890	1900	1910
Chicago	204	597	598	487
Milwaukee	45	88	81	89
Duluth–Superior	..	45	39	35
Detroit	38	94	82	186
Toledo	18	31	51	36
Buffalo	37	99	96	72
Cleveland	67	101	121	179

This appears to be the same retardation that the river cities underwent, though it affects the lake cities far less.

It was noted above that the lake cities are still making excellent growth and an average percentage growth cited for the past decade of 36 per cent. This is usually regarded as the most accurate way to state the growth of population, the percentage of the number at the beginning of a period which is added during the period; for the increase ought, in some measure, to be proportional to the numbers involved. In the last decade Chicago gained 29 per cent., Milwaukee 31, Duluth-Superior 41, Detroit 63, Toledo 28, Buffalo 20 and Cleveland 47. The river cities gained: Pittsburg 18, Cincinnati* 12, Louisville* 8, Memphis 28 and New Orleans 18.

On marking the percentage gains for the whole country it is found that they fall into much the same groups as when the

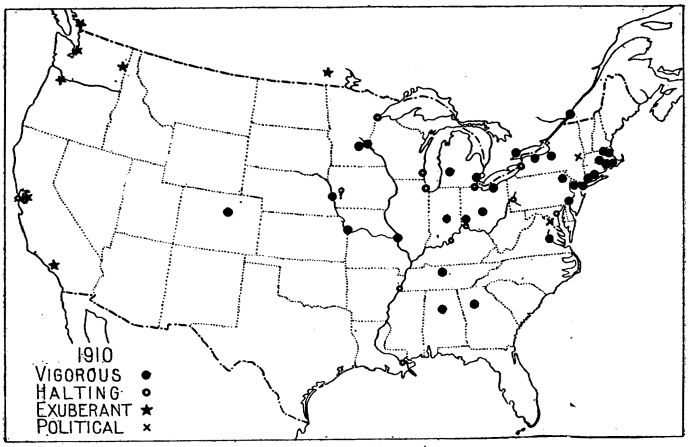

FIG. 6—The map shows how the cities of the three main types fall into geographic groups. The exuberant ones on the Pacific, the vigorous ones in the humid East, the halting ones on the rivers and lakes, with the two seaports, San Francisco and Baltimore. As the lake cities are only a little checked in their growth, and mainly in the two or three last decades, their circles are drawn more nearly solid than those for the river cities. Albany and Washington are located by crosses.

growth or diminution of their decennial increments is studied. Thus seven New Pacific cities gained on an average 193 per cent. in the last decade, taking the average of the percentages for the individual cities, so that to each city is given as much weight as another, regardless of its size. Four cities of the New South, 99 per cent.; fifteen cities of the interior-north, between lakes and rivers, 45 per cent.; five lake cities, 30 per cent.; eleven cities of the Atlantic-north, 23 per cent.; five cities of the river-interior, 16 per cent.; like San Francisco and Baltimore, Washington, 19 per

cent., and Albany, 6 per cent. London, it may be noted for comparison, is adding about 10 per cent; Paris and Berlin, 12 per cent.; Vienna, 22; Budapest, 37, and Sydney, N. S. W., 27. The lower American values, in other words, are rather high ones.

Political Capitals. It would seem, at first sight, that the seat of government of a great state was a place peculiarly favored. The case of Albany seems to put this in doubt. In fact the growth of the other cities along the line from New York to Buffalo and some special features in Albany's geographical position suggest rather that Albany would have been much better off had it *not* been the state capital. Its growth is the worst of all American cities (Fig. 2). Indeed, it has hardly grown at all since 1880. The national capital, Washington, had a normal growth up to 1874, but since that time, when its management was taken from the citizens and put in the hands of a committee of Congress, its growth has been halting: 69,000, 52,000, 49,000 and 52,000. It is a city without significant manufactures or commerce, the creature of law rather than environment. We had ten larger cities than Washington in 1880; now we have eighteen larger.[4] Its curve is shown on Fig. 2, with Albany.

European capitals have usually grown *naturally,* by commerce and industry, and become capitals by virtue of their geographic and economic importance. The significance of a capital is necessarily much greater under a monarchical government than with us. But all the cases here examined point out the close, vital relation of a city, at least with us and our Canadian neighbors, to its environment. It is not laws nor enterprises of groups of energetic men that make cities, but *service* to their region. Hinder them in this service, as the railroads have done in stifling competition of lake and river carriage, and very great diminutions in the growth of population immediately result. It is probable, if this interpretation is correct, that the railroads have punished themselves severely by depriving themselves of potential patrons.

[4] Cleveland, Detroit, Minneapolis-St. Paul, Toronto, Montreal, Kansas City, Buffalo and Milwaukee having all outgrown Washington in the interval.