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The Evolution of Cities

Elisée Reclus

1895

To look at our enormous cities, expanding day by day and almost hour by hour, engulfing year by year fresh colonies of immigrants, and running out their suckers, like giant octopuses, into the surrounding country, one feels a sort of shudder come over one, as if in presence of a symptom of some strange social malady. One could almost take up one's parable against these prodigious agglomerations of humanity and prophesy against them as Isaiah prophesied against Tyre, «full of wisdom and perfect in beauty», or against Babylon, «the son of the morning». Yet it is easy to show that this monster growth of the city, the complex outcome of a multiplicity of causes, is not altogether a morbid growth. If, on the one hand, it constitutes, in some of its incidents, a formidable fact for the moralist, it is, on the other hand, in its normal development, a sign of healthy and regular evolution. Where the cities increase, humanity is progressing; where they diminish, civilisation itself is in danger. It is therefore important to distinguish clearly the causes which have determined the origin and growth of cities, those which lead to their decay and disappearances, and those, again, which are now transforming them little by little, in the process of wedding them, so to speak, to the surrounding country.

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Even in the earliest time, when the primitive tribes of men were still wandering in woods and savannahs, nascent society was endeavouring to produce the germs of the future town; already the shoots that were destined to expand into such mighty branches were beginning to show themselves around the outline of the stem. It is not among our civilised populations, but in the full heyday of primitive barbarism that we must watch the creative forces at work on the production of those centres of human life which were to be the precursors of the town and the metropolis.

To begin with, man is sociable. Nowhere do we find a people whose ideal of life is complete isolation. The craving for perfect solitude is an aberration possible only in an advanced stage of civilisation, to fakirs and anchores distraught by religious delirium or broken by the sorrows of life; and even then they are still dependent on the society around them, which brings them day by day, in exchange for their prayers or benedictions, their daily bread. If they were really rapt in a perfect ecstasy, they would exhale their spirits on the spot; or if they were desperate indeed, they would slink away to die like the wounded animal that hides itself in the black shadows on the forest.

But the sane man of savage society—hunter, fisher, or shepherd—loves to find himself among his companions. His need may oblige him often to keep solitary watch for the game, to follow the shoal alone in a narrow skiff, beaten by the waves, to wander far from the encampment in search of fresh pastures for his flocks; but as soon as he can rejoin his friends with a fair supply of provisions he hies back to the common camp, the nucleus of the city that is to be.

Except in countries where the population is extremely sparse and scattered over immense distances, it is usual for several tribes to have a common trysting-place, generally at some chosen spot easily accessible by natural roadways—rivers, defiles, or mountain passes. Here they have their feasts, their palavers, their exchange of the goods which some lack

are out of place in a city. Only the district schools should be retained within its limits, and these surrounded with gardens; and only such hospitals as are absolutely indispensable for accidents or sudden illness. The transferred establishments are still dependencies of the town, detached from it in point of place, but continuing their vital relation with it; they are so many fragments of the city planted out in the country. The only obstacle to the indefinite extension of the towns and their perfect fusion with the country comes not so much from the distance as the costliness of communication, for, in less time that it takes to walk from one end of the town to the other, one may reach by rail the solitude of the fields or the sea at a distance of sixty or seventy miles. But this limitation to the free use of the railroad by the poor is gradually giving way before the advance of social evolution.

Thus this type of the ancient town, sharply outlined by walls and fosses, tends more and more to disappear. While the countryman becomes more and more a citizen in thought and mode of life, the citizen turns his face to the country and aspires to be a countryman. By virtue of its very growth, the modern town loses its isolated existence and tends to merge itself with other towns, and to recover the original relation that united the rising market-place with the country from which it sprang. Man must have the double advantage of access to the delights of the town, with its solidarity of thought and interest, its opportunities of study and the pursuit of art, and, with this, the liberty that lives in the liberty of nature and finds scope in the range of her ample horizon.

and others have to spare. The Redskins, who in the last century still overran the forest tracts and prairies of the Mississippi, preferred for their rendezvous some peninsula dominating the confluence of the rivers —such as the triangular strip of land that separates the Monongahela and the Allegheny; or bare hills commanding a wide and uninterrupted view, whence they could see their companions travelling over the distant prairie or rowing on the river or the lake —such as, for instance, the large island of Manitou, between Lake Michigan and Lake Huron. In countries rich in game, fish, cattle, and cultivable land, the grouping becomes closer, other things being equal, in proportion to the abundance of the means of living. The sites of future towns are indicated already by the natural meeting-place common to the various centres of production. How many modern cities have sprung up in this way in places which have been a resort from all antiquity!

The traffic in commodities carried on at these trysting-places becomes an additional incentive, over and above the instinctive social need, to the formation of fresh nuclei among the primitive populations; and further, some nascent industry generally accompanies these beginnings of trade. A bed of flint for cutting and polishing weapons and other implements, a layer of pottery clay or pipe clay for vessels of calumets, a vein of metal which might be cast or hammered into trinkets, a heap of beautiful shells suitable for ornaments or money —all these are attractions which draw men together; and if at the same time this places are favourable situated as centres of food-supply, the combine all the requirements necessary for the formation of a town.

But man is not guide only by his interest in the conduct of his life. The fear of the unknown, the terror of mystery, tends also to fix a centre of population in the neighbourhood of places regarded with superstitious dread. The terror itself attracts. If vapours are seen ascending from fissures in the soil, as if from the furnace where the gods are forging their thunderbolts; if

strange echoes are heard reverberating among the mountains like voices of mocking genii; if some block of iron falls from heaven, or some mysterious shape takes human form and stalks the air no sooner does such a phenomenon mark out some special spot, than religion consecrates it, temples rise above it, the faithful gather round, and we have the beginnings of a Mecca or a Jerusalem.

Human hatred, even, has had its share in the founding of cities; even in our own day it founds them still. It was one of the constant cares of ancestors to guard themselves from hostile incursions. There are vast regions in Asia and Africa where every village is surrounded by its breastwork and palisades; and even in our own Southern Europe every group of dwellings situated in the vicinity of the sea has its walls, its watch-tower, and its keep or fortified church, and on the least alarm the country-folk take shelter within its ramparts. All the advantages of the ground were utilised to make the place of habitation a place also of refuge. An islet afforded an admirable site for a maritime or lacustrine city, which might at once overlook its enemies, and receive its friends in the port cut off by its cluster of cabins from the open sea. Steep rocks, with perpendicular sides, from which blocks of stone could be rolled down upon the assailant, formed a sort of natural fortress which was much appreciated. Thus the Zuñi, the Moqui, and other cliff-dwellers poised themselves on their lofty terraces, and dominated space like eagles.

Primitive man, then, looked out the site; civilised man founded and built the city. At the earliest beginnings of written history, among the Chaldaeans and the Egyptians, on the borders of the Euphrates and the Nile, the city had long existed, and it appears by that time to have numbered its inhabitants by tens and hundreds of thousands. The cultivation of these river-valleys required an immense amount of organised labour, the draining of swamps, the deflecting of river-beds, the construction of embankments, the digging of canals for

persion of the urban population among the fields and forests for a hundred miles round, and even down to the seaside. Hundreds of thousands of people who have their business in town, and who, as far as their work is concerned, are active citizens, pass their hours of repose and domestic fellowship under the shadow of tall trees, by running brooks, or within sound of the dashing waves. The very heart of London, the City properly so-called, is little but a great Exchange by day, depopulated by night; the active centres of government, of legislation, of science and art, cluster round this great focus of energy, increasing year by year, and elbowing out the resident population into the suburbs. It is the same, again, in Paris, where the central nucleus, with its barracks, its tribunals, and its prisons, presents a military and strategical rather than a residential aspect.

The normal development of the great towns, according to our modern ideal, consists, then, in combining the advantages of town and country life, —the air and scenery and delightful solitude of the one with the facile communication and the subterranean service of force, light, and water which belong to the other. What was once the most densely inhabited part of the city is precisely the part which is now becoming deserted, because it is becoming common property, or at least a common centre of intermittent life. Too useful to the mass of the citizens to be monopolised by private families, the heart of the city is the patrimony of all. It is the same, for the same reasons, with the subordinate nuclei of population; and the community claims, besides, the use of the open spaces of the city for public meetings and open-air celebrations. Every town should have its agora, where all who are animated by a common passion can meet together. Such an agora is Hyde Park, which, with a little packing, could hold a million persons.

For other reasons, again, the city tends to become less dense, and to open out a little in its central regions. Many institutions originally planted in the heart of the town are moving out into the country. Schools, colleges, hospitals, almshouses, convents,

flower springing clean beneath the foot without a single sod being stirred around the mother plant.

Thus, by destruction or by restoration, the towns are for ever being renewed where they stand; and this process will doubtless go on accelerating under the pressure of the inhabitants themselves. As men modify their own ideal of life, they must necessarily change, in accordance with it, that ampler corporeity which constitutes their dwelling. The town reflects the spirit of the society which creates it. If peace and goodwill establish themselves among men, there can be no doubt that the disposition and aspect of the cities will respond to the new needs which will spring out of the great reconciliation. In the first place, the hopelessly sordid and unhealthy parts of the city will be improved off the face of the earth, or will be represented only by groups of houses freely planted among trees, pleasant to look at, full of light and air. The richer quarters, now handsome to the eye, but often both inconvenient and insanitary nevertheless, will be similarly transformed. The hostile or exclusive character which the spirit of individual ownership now gives to private dwellings will have disappeared; the gardens will no longer be hidden out of sight by inhospitable walls; the lawns and flower-beds and plantations which surround the house will run down by shady walks to the public promenades outside, as they do already in some English and American University towns. The predominance of the common life over a strictly enclosed and jealously guarded private will have attached many a private house to an organic group of schools or phalansteries. Here also large spaces will be thrown open to admit the air and give a better appearance to the whole.

Obviously, the towns which are already growing so fast will grow yet faster, or rather they will melt gradually into the distant country, and throughout the length and breadth of the land the provinces will be scattered with houses which, in spite of the distance, really belong to the town. London, compact as it is in its central districts, is a splendid example of this dis-

irrigation; and the completion of these works necessitated the building of cities in the immediate neighbourhood of the stream, on an artificial platform of beaten earth raised well above the level of inundation. It is true that in these far-distant times, sovereigns who had that lives of innumerable slaves at their disposal had already begun to choose the sites of their palaces at their own caprice; but personal as their power was, they could but carry on the normal movement initiated by the populations themselves. It was the country folk, after all, who gave birth to the cities which in later times have so often turned against their forgotten creators.

Never was the normal and spontaneous birth of cities more strikingly illustrated than in the Greek era, when Athens, Megara, Sicyon sprang up at the foot of their hills like flowers in the shade of the olives trees. The whole country—the fatherland of the citizen—was contained within a narrow space. From the heights of its acropolis he could follow with his eye the limits of the collective domain, now along the line of the sea-shore, traced by the white selvage of the waves, then across the distant blue of wooden hill, and past ravines and gorges to the crests of the shining rocks. The son of the soil could name every brooklet, every clump of trees, every little house in sight. He knew every family that sheltered under those thatched roof, every spot made memorable by the exploits of his national heroes, or by the fallen thunderbolts of his gods. The peasant, on their part, regarded the city as peculiarly their own. They knew the beaten paths that had grown to be its streets, the broad roads and squares that still bore the names of the trees that used to grow there; they could remember playing round the spring which now mirrored the statues of the nymphs. High on the summit of the protecting hill rose the temple of the sculptured deity whom they invoked in hours of public danger, and behind its ramparts they all took refuge when the enemy was in possession of the open country. Nowhere did any other soil beget a patriotism of

such intensity, a life of each so bound up with the prosperity of all. The political organism was as simple, as sharply defined, as one and indivisible, as that of the individual himself.

Far more complex to begin with was the commercial city of the Middle Ages, which lived by its industries or its foreign trade, and which was often surrounded only by a little belt of gardens. It saw around it in disturbing proximity the fortresses of its feudal friends or adversaries, clasping the wretched hovels of the villagers between their feet, like eagles planting their talons in their prey. In this medieval society the antagonism between town and country sprang up as the result of foreign conquest; reduced to mere serfdom under the baron, the labourer—a fixture of the soil, in the insulting language of the law—was flung like a weapons against the towns, by no will of his own; whether as workman or as armed retainer, he was forced into opposition against the borough with its rising industrial class.

Of all European countries, Sicily is the one in which the pristine harmony between town and country has most nearly survived. The open country is uninhabited except by day, during the hours of field-labour. There are no villages. In the evening labourers and herdsmen return to the city with their flocks; peasants in the daytime, they become citizens at night. There is no sweeter or more touching sight than that of the processions of toilers returning to the towns at the moment when the sun sinks behind the mountains, casting up the vast shadow of the earth against the eastern horizon. The unequal groups follow each other at intervals up the ascending road—for, with the view to security, the towns are almost always perched on the summit of some cliff, where their white walls can be seen for ten leagues round. Families and friend join each other for the climb, and the children and the dogs run with joyous cries from group to group. The cattle pause from time to time to crop a bit of choice herbage by the roadside. The young girls sit astride on the beast, while the lads help them over the difficult places, and sing and laugh and sometimes whisper softly with them.

average than that of many country places where the inhabitants breathe day by day the reek of the dunghill, and live in primitive ignorance of the simplest laws of hygiene.

The consciousness of a collective urban life is shown, again, by the artist efforts of the municipalities. Like ancient Athens, like Florence and the other free cities of the Middle Ages, every one of our modern towns is bent on beautifying itself; hardly the humblest village is without its bell-tower, its column, or its sculptured fountain. Dismally bad art it is, most of it, this work designed by qualified professors under the supervision of a committee; and the more ignorant, the more certain it is to be pretentious. Real art would go its committee. These little gentlemen of the municipal councils are like the Roman General Mummius, who was quite willing to give orders that his soldiers should repaint every picture they injured; they mistake symmetry for beauty, and think that identical reproductions will give their towns a Parthenon or a St. Mark's.

And even if they could indeed recreate such works as they require the architects to copy, it would be none the less an outrage on nature; for no building is complete without the atmosphere of time and place that gave it birth. Every town has its own life, its own features, its own form, with what veneration should the builder approach it! It is a sort of offence against the person to take away the individuality of a town, and overlay it with conventional buildings and contradictory monuments out of all relation to its actual character and history. We are told that in Edinburgh, the lovely Scottish capital, pious hands are at work in quite another way; breaking in upon its picturesque but unclean wynds, and transforming them gradually, house by house—leaving every inhabitant at home as before, but in a cleaner and more beautiful home, where the air and light come through; grouping friends with friends, and giving them places of reunion for social intercourse and the enjoyment of art. Little by little a whole street, retaining its original character, only without the dirt and smells, comes out fresh and crisp, like the

the question of public buildings involves the whole social question itself. Will the time ever come when all men, without exception, shall breathe fresh air in abundance, enjoy the light and sunshine, taste the coolness of the shade and the scent of roses, and feed their children without fear that the bread will run short in the bin? At any rate, all those of us who have not reserved their ideal for a future life, but think a little also of the present existence of man, must regard as intolerable any ideal of society which does not include the deliverance of humanity from mere hunger.

For the rest, those who govern the cities are mostly governed themselves—often against their will—by the very just idea that the town is a collective organism, of which every separate cellule has to be kept in perfect health. The great business of municipalities is always that which relates to sanitation. History warns them that disease is no respecter of persons, and that it is dangerous to leave the pestilence to depopulate the hovels at the back door of the palace. In some places they go so far as to demolish the infected quarters altogether, not considering that the families they expel can only rebuilt their habitations a little further on, and perhaps carry the poison into more wholesome regions. But, even where these sinks of disease are left untouched, everybody agrees as to the importance of a thorough general sanitation—the cleansing of the streets, the opening of gardens and grassy spaces shadowed by tall trees, the instant removal of refuse, and the supply of pure and abundant water to every district and every house. In matters of this kind a peaceful competition is going on among the towns of the more advanced nations, and each is trying its particular experiments in the way of cleanliness and comfort. The definitive formula, indeed, has not yet been found; for the urban organism cannot be made to carry on its provisioning, its sanguine and nervous circulation, the repair of its forces and the expulsion of its waste, by an automatic process. But at least, many towns have been so far improved that life there is wholesomer on the

But it is not only in Sicily—the Sicily of Theocritus—that one meets these gracious evening groups. Round the whole on the Mediterranean coast, Asia Minor to Andalusia, the antique customs are partially retained, or at least have left their traces. All the little fortified towns that line the shores of Italy and Provence belong to the same type of miniature republic, the nightly resort of all the peasants of the agricultural outskirts.

If the earth were perfectly uniform in the shape of its relief and the qualities of its soil, the towns would occupy, so to speak, and almost geometrical position. Mutual attraction, the social instinct, the convenience of trade, would have caused them to spring up at pretty nearly equal distances. Given a flat plain without natural obstacles, without rivers or favourably situated ports, and with no political divisions carving the territory into distinct States, the chief city would have been planted full in the centre of the country; the large towns would have been distributed at equal distances round it, rhythmically spaced out among themselves, and each possessing its planetary system of smaller towns, the normal distance being the distance of a day's march—for, in the beginning, the step of man as the natural measure between place and place, and the number of miles that can be covered by an average walker between dawn and dusk was, under ordinary conditions, the regular stage between one town and the next. The domestication of animals, and, later, the invention of the wheel, modified these primitive measurements; the stride of the horse, and then the turn of the axle-tree, became the unit of calculation in reckoning the distance between the urban inhabited countries—in China, in the neighbourhood of the Ganges, in the plains of the Po, in Central Russia and even in France itself—one may discern beneath the apparent disorder a real order of distribution, which was evidently regulated long ago by the step on the traveller.

A little pamphlet in 1850, or thereabouts, by Gobert, an ingenious man and an inventor, living as a refugee in London,

drew attention to the astonishing regularity of the distribution of the large towns in France before mining and other industrial operations came in to upset the natural balance of the population. Thus Paris is surrounded, towards the frontiers of the country, by a ring of great but subordinate cities —Lille, Boreaux, Lyons. The distance from Paris to the Mediterranean being about double the ordinary radius, another great city had to arise at the extremity of this line, and Marseilles, the old Phoenician and Greek colony, developed itself splendidly. Between Paris and these secondary centres arose, at fairly equal distances, a number of smaller, but still considerable cities, separates from each other by a double distance, say, of about eighty miles —Orleans, Tours, Poitiers, Angoulême. Finally, halfway between these tertiary centres, in a position suggestive of the average distance, there grew up the modest towns of Etampes, Amboise, Chatëllerault, Ruffec, Libourne. Thus the traveller, in his journey through France, would find, as it were, alternately a halting-place and a resting-place, the first adequate for the foot-passenger and the second convenient for the horseman and the coach. On almost all the high roads the rhythm of cities follows the same plan —a sort of natural cadence regulating the progress of men, horses, and carriages.

The irregularities of this network of stations are all explicable by the features of the country, its ups and downs, the flow of its rivers, the thousand points of geographical variation. The nature of the soil, in the first place, influences men in their spontaneous choice of a site for their dwellings. Where the blade cannot grow the town cannot grow either. It turns away from the sterile heath, from the hard gravels and the heavy clays, and expands first in such of the more fertile districts as are easy of cultivation —for the soft alluvium of the marshes, fertile enough in its way, is not always easily accessible, and cannot be brought under culture without an organisation of labour which implies a very advanced stage of progress.

the loveliest sites on the earth have been thus desecrated. At Buffalo, for instance, the passenger strives in vain to follow the bank of the wonderful Niagara across a wilderness, of rails and quagmires and slimy canals, of gravel heaps and dunghills, and all the others impurities of the city.

Another barbarous speculation is that which sacrifices the beauty of the streets by letting the ground in lots, on which the contractors build whole districts, designed beforehand by architects who have never so much as visited the spot, far less taken the trouble to consult the future inhabitants. They erect here a Gothic church for the Episcopalians, there a Norman structure for the Presbyterians, and a little further on a sort Pantheon for the Baptist; they map out their streets in squares and lozenges, varying grotesquely the geometrical designs of the interspaces and the style of the houses, while religiously reserving the best corners for the grog-shops. The absurdity of the whole heterogeneous mixture is aggravated in most of our cities by the intervention of official art, which insists on the types of architecture following a given pattern.

But even if the rich contractor and the official Maecenas were always men of cultivated taste, the towns would still present a painful contrast between luxury and squalor, between the sumptuous and insolent splendour of some quarters, and the sordid misery of the others, where the low and crooked walls hide courts oozing with damp, and starving families crouched under tumble-down styes of lath or stone. Even in towns where the authorities seek to veil all this behind a decent mask of whitewashed enclosures, misery still stalks outside, and one knows that death is carrying on its cruel work within. Which of our cities has not its Whitechapel and its Mile End Road? Handsome and imposing as they may be to the outward eye, each has its secret or apparent vices, its fatal defect, its chronic malady which must end by killing it, unless a free and pure circulation can be re-established throughout the whole organism. But from this point of view

stretching their arms freely into the fields below, they sit all of a heap, like creatures with cropped ears and amputated limbs. Look at the melancholy form that military science has given to Lille, to Metz, to Strasburg! Even Paris, with all the beauty of her buildings, the grace of her promenades, the charm of her people, is spoiled by her brutal setting in a framework of fortifications. Released from that unpleasant oval in broken lines, the city might have expanded in a natural and aesthetic manner, and taken the simple and gracious form suggested by nature and life.

Another cause of ugliness in our modern towns springs from the invasion of the great manufacturing industries. Almost every town we have is encumbered with one or more suburbs bristling with stinking chimneys, where immense buildings skirt the blackened streets with walls either bare and blind, or pierced, in sickening symmetry, with innumerable windows. The ground trembles under the groaning machinery and beneath the weight of waggons, drays and luggage trains. How many towns there are, especially in young America, where the air is almost unbreathable, and where everything within sigh—the ground, the walls, the sky—seems to sweat mud and soot! Who can recall without a horror of disgust a mining colony like that sinuous and interminable Scranton, whose seventy thousand inhabitants have not so much as a few acres of foul turf and blackened foliage to clear their lungs? And that enormous Pittsburg with its semi-circular coronet of suburbs fuming and flaming overhead, how is it possible to imagine it under a filthier atmosphere than now, though the inhabitants aver that it has gained both in cleanliness and light since the introduction of natural gas into its furnaces? Other towns, less black than these, are scarcely less hideous, from the fact that the railway companies have taken possessions of streets, squares, and avenues, and send their locomotives snorting and hissing along the road, and scattering the people right and left from their course. Some of

Again, the unevenness of the land, as well as the niggardliness of the soil, tends to repel population, and prevents, or at least retards, the growth of cities. The precipices, the glaciers, the snows, the bitter winds, thrust men out, so to speak, from the rugged mountain valleys; and the natural tendency of the towns is to cluster immediately outside the forbidden region, on the first favourable spot that presents itself at the entrance of the valleys. Every torrent has its riverside town in the lowland, just where its bed suddenly widens and it breaks into a multitude of branches among the gravels. In the same way every double, triple, or quadruple confluent of the valley has its important town, a town so much the more considerable, other things being equal, as the branches of the delta carry a greater abundance of water. Take, for instance, from this point of view the geography of the Pyrenees and of the Alps. Could any situation be more naturally indicated than that of Zaragoza, placed on the mid course of the Ebro, at the crossing of the double of the Gallego and the Huerva? The city of Toulouse, again, the metropolis of Southern France, stands on a spot which a child might have pointed out beforehand as a natural site, just where the river becomes navigable below the confluence of Upper Garonne, the Ariège and the Ers. At the opposite corners of Switzerland, Basle and Geneva stand at the great crossroads followed by the ancient migrations of peoples; and on the southern slope of the Alps every valley without exception has its warden town at its gates. Great cities like Milan and so many others mark the chief points of convergence; and the whole upper valley of the Po, forming three-quarters of an immense circle, has for its natural centre the city of Turin.

But the rivers must not be regarded as simply the median artery of the valleys; they are essentially movement and life. Now life appeals to life; and man with his ever-wandering spirit, continually impelled towards the distant horizon, loves to linger beside the flowing stream which bears at once his vessels and his thoughts. Nevertheless, he will not settle

indifferently on either side the stream, making no distinction between the outer and the inner curve, the rapid and the lazy current. He tries hither and thither before he finds the site that pleases him. He chooses by preference the points of convergence or ramification, where he can take advantage of the three or four navigable ways that offer themselves at starting, instead of two directions only, up stream and down stream. Or he plants himself at the necessary point of stoppage—rapids, waterfalls, rocky defiles, where vessels come to anchor and the merchandise is transhipped; or where the river narrows and it becomes easy to cross from side to side. Finally, in each river basin the vital point is found to be the head of the estuary, where the rising tide checks and bears up the downward current, and where the boats borne down by the fresh water meet the ocean vessels coming in with the tide. This place of meeting of the water, in the hydrographic system, may be likened to the position held by the stock of a tree between the system of serial vegetation above and that of the deep-spreading roots below.

The deviations of the coast-line also affect the distribution of towns. Straight sandy shore, almost unbroken, inaccessible to large vessels except on the rare days of dead calm, are avoided by the inhabitants of the interior as well as by the seafaring man. Thus, the 136 miles of coast which run in a straight line from the mouth of the Gironde to that of the Adour have no town at all except Arcachon, which is simply a small watering-place, set well back from the sea behind the dunes of the Cap Ferré. In the same way, the formidable series of littoral barriers that flanks the Carolinas along their Atlantic shore gives access, for the whole distance between Norfolk and Wilmington, only to a few petty towns carrying on with difficulty a dangerous traffic. In other sea-coast regions, islets and islets, rocks, promontories, peninsulas innumerable, the thousand jags and snippings of the cliffs, equally prevent the formation of towns in spite of all the advantages of deep

cally changing cultivated land into plantations, and destroying whole villages to replace them by keepers' lodges built at convenient distances?

Amongst the towns of wholly or partially artificial origin, which answer to no real need of industrial society, must be mentioned also those which exist for purposes of war, at any rate those which have been built in our own day by the great centralised States. It was not so in the days when the city was capable of containing the whole nation, when it was absolutely necessary for purposes of defence to built ramparts following the exterior outline of all quarters of the town, to construct watch-towers at the angles, and to erect alongside the temple, on the summit of the protecting hill, a citadel where the whole body of the citizens could take refuge in case of danger; and when, if the town were separated from its port by a strip of intervening country—as at Athens, Megara, or Corinth—the road from the one to the other must itself be protected by long walls. The whole pile of fortifications explained itself by the nature of things, and took a natural and picturesque place in the landscape. But in our days of extreme division of labour, when the military power has become practically independent of the nation, and no civilian dare advise or meddle in matters of strategy, most fortified towns have a quite unnatural form, in no sort of agreement with the undulations of the soil; they cut the landscape with an outline offensive to the eye. Some of the old Italian engineers at least attempted to give a symmetrical outline to their fortifications by shaping them like an immense Cross or Star of Honour, with its rays, its jewels, its enamels; the white walls of its bastions and redans contrasting regularly with the calm and large placidity of the open fields. But our modern fortresses have no ambition to be beautiful; the thought never enters the head of the strategist; and a mere glance at the plan of the fortifications reveals their monstrous ugliness, their total want of harmony with their surroundings. Instead of following the natural outlines of the country and

not been able to develop without a tremendous waste of living force. Madrid and St. Petersburg, for example, whose primitive huts and hamlets would never have grown into the populous cities of to-day but for Charles the Fifth and Peter the First, were built at an enormous cost. Yet, if they owe their creation to despotism, it is to the associated toil of men that they owe the advantages which have enabled them to live on as if they had had a normal origin; and though the natural relief of the soil had never destined them to become centres of human life, centres they are, thanks to the convergence of artificial communications —roads, railways and canals— and the interchange of thought. For geography is not an immutable thing; it makes and remakes itself day by day; it is modified every hour by the action of men.

But nowadays we hear no more of Caesars building cities for themselves; the city-builders of to-day are the great capitalist, the speculators, the presidents of financial syndicates. We see new towns spring up in a few months, covering a wide surface, marvellously laid out, splendidly furnished with all the implements of modern life; the school and the museum, even, are not wanting. If the spot is well chosen, these new creations are soon drawn into the general movement of the life of the nations, and Creuzot, Crewe, Barrow-in-Furness, Denver, La Plata, take rank among the recognised centres of population. But if the site is a bad one, the new towns die with the special interests that gave them birth. Chyeyenne City, ceasing to be a railway terminus, sends its cottages forward, so to speak, by next train; and Carson City disappears with the exhausted silver mines which alone had peopled that hideous desert.

But if the caprice of capital sometimes attempts to found cities which the general interest of society condemn to perish, on the other hand it destroys many small centres of population which only ask to live. In the outskirts of Paris itself, do we not see a great banker and landed proprietor adding year by year another two or three hundred acres to his domain, systemati-

and sheltered waters. The violence of a too tempestuous coast forbids the settlement of more than very small groups of persons. The most favourable situations are those which afford a temperate climate and a coast accessible both by land and sea, alike to ships and wheeled vehicles.

All the other features of the soil, physical, geographical, climatic, contribute in the same way to the birth and growth of cities. Every advantage augments their power of attraction; every disadvantage detracts from it. Given the same environment and the same stage of historical evolution, the size of the cities is measured exactly by the sum of their natural privileges. An African city and a European city, existing under similar natural condition, will be very different from one another, because their historical environment is so totally different; but there will, nevertheless, be a certain parallelism in their destinies. By a phenomenon analogous to that of the disturbance of planets, two neighbouring urban centres exercise a mutual influence on each other, and either promote each other's development by supplying complementary advantages —as in the case of Manchester, the manufacturing town, and Liverpool, the commercial town— or injure each other by competition where their advantages are of the same kind. Thus the town of Libourne, which stands of the Dordogne, only a little distance from Bordeaux, but just on the other side of the neck of land that separates the Dordogne from the Garonne, might have rendered the same services to trade and navigation that Bordeaux actually renders; but the neighbourhood of Bordeaux has been her ruin; she has been eaten up, so to speak, by her rival, has almost completely lost her maritime importance, and is little else but a halting-place for travellers.

There is another remarkable fact which must be taken into account —the way in which the geographic force, like that of heat or electricity, can be transported to a distance, can act at a point remote from its centre, and may even give birth, so to speak, to a secondary city more favourably placed than the first.

We may instance the port of Alexandria, which, in spite of its distance from the Nile, is nevertheless the emporium of the whole Nile basin, in the same way as Venice in the port of the Paduan plain, and Marseilles that of the valley of the Rhone.

Next to the advantages of climate and soil come the subterranean riches which sometimes exert a decisive influence on the position of towns. A town rises suddenly on an obviously unfavourable site, where the ground is nevertheless rich in quarrying stone, in pottery clay or marbles, in chemical substances, in metals, in combustible minerals. Thus Potosi, Cerro do Pasco, Virginia City, have sprung up in regions where, but for the presence of veins of silver, no city could ever have been founded. Merthyr Tydvil, Ceuzot, Essen, Scraton, are creations of the coal measures. All the hitherto unused natural forces are giving rise to new cities in precisely the places which were formerly avoided, now at the foot of the cataract, as at Ottawa, now among the high mountains, within reach of the natural conduits of electricity, as in many Swiss valleys. Each new acquisition of man creates a new point of vitality, just as each new organ forms for itself new nervous centres.

In proportion as the domain of civilisation expands and these attractions make themselves felt over a wider area, the towns, belonging themselves to a larger organism, may add to the special advantages which have given them birth advantages of a more general kind, which may secure them an historical rôle of the first importance. Thus Rome, already occupying a central position in relation to the country enclosed within the semicircle of the volcanic Latin hills, found herself also placed in the centre of the oval formed by the Apennines; and later, after the conquest of Italy, her territory occupied the median point of the whole peninsula bounded by the Alps, and marked almost exactly the halfway station between the two extremities of the Mediterranean, the mouths of the Nile and the Straits of Gibraltar. Paris, again, so finely situated near a triple confluence of the water, at the centre of an almost insular river-basin,

bered, dirt-encrusted— must keep up a laborious process of reconstruction, which, in the struggle for existence, places her at a great disadvantage in comparison with young cities like New York and Chicago. For the selfsame reasons the huge cities of the Euphrates and the Nile, Babylon and Nineveh, Memphis and Cairo, found themselves successively displaced. Each of these cities —while, thanks to the advantages of its position, it retained its historical importance— was forced to abandon its superannuated quarters and shift its basis further on, in order to escape from its own rubbish, or even from the pestilence arising from its heaps to refuse. Generally speaking, the abandoned site of a town which has moved on is found to be covered with graves.

Other causes of decay, more serious than these, because arising out of the natural development of history, have overtaken many a once famous city; circumstances analogous to those of its birth have rendered its destruction inevitable. Thus the superseding of an old highroad or crossway by some improved mode of conveyance may destroy at one blow a town created by the necessities of transport. Alexandria ruined Pelusium; Carthagena in the West Indies gave Puerto Bello back to the solitude of its forest. The demands of commerce and the suppression of piracy have changed the sites of almost all the towns built on the rocky shores of the Mediterranean. Formerly they were perched on rugged hills and girt with thick walls, to defend them from the seigneurs and the corsairs; now they have come down from their fortresses and spread themselves out along the seashore. Everywhere the citadel is exchanged for the esplanade; the Acropolis has come down to the Piraeus.

In our societies, where political institutions have often given a preponderating influence to the will of a single person, it has frequently happened that the caprice of the sovereign has founded a city in a spot where it could never have sprung up of itself. Thus planted on an unnatural site, the new city has

It has often been suggested that towns have a constant tendency to grow westward. This fact—which is true in many cases—is easily explained, so far as the countries of Western Europe and others of similar climate are concerned, since the western side is the side directly exposed to the purer winds. The inhabitants of these quarters have less to fear from disease than those at the other from its passage over innumerable chimneys, mouths of sewers, and the like, and with the breath of thousands or millions of human beings. Besides, it must not be forgotten that the rich, the idle, and the artist, who have leisure to take in the full delight of the open sky, are much more apt to enjoy the beauties of the twilight than those of the dawn; consciously or unconsciously, they follow the movement of the sun from east to west, and love to see it disappear at last in the resplendent clouds of evening. But there are many exceptions to this normal growth in the direction of the sun. The form and relief of the soil, the charm of the landscape, the direction of the running waters, the attraction of local industries and commerce, may solicit the advance of men towards any point of the horizon.

By the very fact of its development, the city, like any other organism, tends to die. Subject like the rest to the conditions of time, it finds itself already old while other towns are springing up around it, impatient to live their life in their turn. By force of habit, indeed by the common will of its inhabitants, and by the attraction that every such centre exerts upon the surrounding neighbourhood, it tries to live on; but—not to speak of the mortal accidents which may happen to cities as to men—no human group can incessantly repair its waste and renew its youth without a heavier and heavier expenditure of effort; and sometimes it gets tired. The city must widen its streets and its squares, rebuild its walls, and replace its old and now useless buildings with structures answering to the requirements of the time. While the American town springs into being full-armed and perfectly adapted to its surroundings, Paris—old, encum-

and towards the middle of a concentric series of geological formations, each containing its special products, has also the great advantage of standing at the convergence of two historic roads—the road from Spain by Bayonne and Bordeaux, and the road from Italy by Lyons, Marseilles, and the Cornice; while at the same time it embodies and individualises all the forces of France in relation to her Western neighbours—England, the Netherlands, and Northern Germany. A mere fishing-station at first between two narrow arms of the Seine, the opportunities of Paris were limited to her nets, her barges, and her fertile plain that stretches from the Mont des Martyrs to Mont Geneviève. Next, her confluence of rivers and stream—The Seine, the Marne, the Oureq, the Bièvre—turned her into a fair or market; and the convergent valley of the Oise added its traffic to the rest. The concentric formations developed around the ancient sea-bottom gradually gave an economic importance to their natural centre, and the historic road between the Mediterranean and the ocean made her the nucleus of its traffic.

Of the local advantages of London, seated at the head of the maritime navigation of the Thames, there is little need to speak; for has she not the further privilege of being of all cities of the world the most central—the one most readily accessible, on the whole, from all parts of the globe?

In his interesting work on “The Geographical Position of the Capitals of Europe,” J. G. Kohl shows how Berlin—long a mere village, without other merit than that of affording to the natives an easy passage between the marshes and a solid footing on an islet of the Spree—came, in the process of the historical development of the country, to occupy, upon a navigable waterway of lakes and canals, the halfway station between the Oder and the Elbe, where all the great diagonal highroads of the country naturally meet and cross, from Leipzig to Stettin, from Breslau to Hamburg. In earlier times the Oder, where it reaches the point at which Frankfort now stands, did not turn off sharply to the right to fall into the Baltic, but contin-

ued its course in a north-easterly direction, and emptied itself into the North Sea. This immense river, more than six hundred miles long, passed the very spot now occupied by Berlin, which stands almost in the middle of its ancient valley. The Spree, with its pools and marshes, is but the vestige of that mighty watercourse. The German capital, dominating, as it does, the course of both rivers, commands also the two seas, from Memel to Embden; and it is this position, far more than any artificial centralisation, which gives it its power of attraction. Besides, like all the great cities of the modern world, Berlin has multiplied her natural advantages tenfold, by the converging railway lines which draw the commerce or her own and other countries to her marts and warehouses.

But the development of the capital is, after all, factitious to a great extent; the administrative favours bestowed on it, the crowd of courtiers, functionaries, politicians, and all the interested mob that presses round them, give it too distinctive character to admit of its being studied as a type. It is safer reasoning from the life of cities which owe their oscillations to purely geographical and historical conditions. There is no more fruitful study for the historian than that of a city whose annals, together with the aspect of the place itself, permit him to verify on the spot the historical changes which have all taken place in accordance with a certain rhythmic rule.

Under such conditions one sees the scene evolve before one's eyes; the fisher's hut; the gardener's hut close by; then a few farms dotting the country-side, a mill-wheel turning in the stream; later on, a watch-tower hanging on the hill. On the other side of the river, where the prow of the ferry-boat has just grazed the bank, some one is building a new hut; an inn, a little shop close to the boatman's house, invite the passenger and the buyer; then on its levelled terrace the marked-place springs up, conspicuous amongst the rest. A broadening track, beaten by the feet of men and animals, runs down from the market-place to the river; a winding path begins to climb the

hill; the roadways of the future become distinguishable in the trodden grass of the fields, and house take possession of the green wayside where the cross-roads meet. The little oratory becomes a church; the open scaffolding of the watch-tower gives place to the fortress, the barrack, or the palace; the village grows into a town, and the town into a city. The true way to visit one of these urban agglomerations which has lived a long historic life, is to examine it in the order of its growth, beginning with the site —generally consecrated by some legend— which has served it as a cradle, and ending with its last improvements in factories and warehouses. Every town has its individual character, its personal life, a complexion of its own. One is gay and animated; another keeps a pervading melancholy. Generation after generation, as it passes, leaves behind it this inheritance of character. There are cities that freeze you as you enter with their look on stony hostility; there are other where you are blithe and buoyant as at the sight of a friend.

Other contrasts present themselves in the modes of growth of different cities. Following the direction and importance of its overland commerce, the town projects its suburbs like tentacles along the country roads; if it stand on a river it spreads far down the bank near the places of anchorage and embarkation. One is often struck by the marked inequality of two riverside parts of a city which seem equally well situated to attract the population; but here the cause must be sought in the direction of the current. Thus the plan of Bordeaux suggests at once that the true centre of the inhabited circle should have been on the right bank of the river, at the place occupied by the small suburb of La Bastide. But here the Garonne describes a mighty curve, and sweeps its waters along the quays of the left bank; and where the life of the river flings its force, the life of commerce is necessarily carried with it. The population follows the deeper current, and avoids the oozy banks of the opposite shore.