

## CLIMATE AND MAN

By W. HELLPACH

*This magazine has published a number of articles on themes related to the natural sciences, viz., "Wood and Man" (November 1942), "Ape and Man" (August/September 1943), "Biotechnics" (January 1944). Although these articles were written by different authors, they revealed an identical basic conception: they all regarded man, not as an isolated phenomenon, but as a part of nature. The following essay, which unfolds the human problem from an entirely different angle, arrives at a similar conclusion.*

*It is not a coincidence that the authors of all these articles are Germans; for, of all the countries in the West, Germany is the one to have most completely overcome the liberalistic idea of man's independence of nature, an idea which is still widespread, particularly in America, the land of "Man-Made Catastrophe" (August/September 1943). Modern German science sees in man not only the creator but also the creature of nature and has realized that he is able to derive great strength from this relationship and from his respect for nature's laws.*

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THE Greek agora and the Roman forum, the open market squares in which the public life of antiquity went on, are only possible in a mild, southern climate not subject to frequent changes in weather. North of the Alps, where the weather is uninviting for almost three quarters of the year, halls, houses, and offices are needed for this purpose; although now and again speeches and demonstrations may be improvised in the open air (as in Hyde Park in London or in the Lustgarten in Berlin), political life as such cannot be carried on out-of-doors. Thus the climate of the Northerners imposes on their political life a physiognomy different from that of southern countries. A similar difference is also to be found in private life. The Northerner often finds the homes of the lower classes of the South primitive, and those of the well-to-do, although externally ornate, lacking in the comfortable atmosphere of Northern houses. This, again, has to do with the climate, which does not force the people of the South to spend the major part of their lives indoors.

### CHRISTMAS AND NOËL

Indeed, climate has influenced many sides of family life, too, and one can

actually speak of "winter" traits, which are to be found in their most pronounced form in the highlands and the continental East of Europe, i.e., where there are long, hard winters which banish man into the warmth of his own room. A "winter" atmosphere of that kind surrounds the German Christmas, for instance: it has influenced its customs and permeates its spirit. Germans feel that Christmas is not Christmas without snow and frost. Both Catholics and Protestants are united in this feeling in Germany. Indeed, the Catholic Christmas of Germany is in its entire atmosphere much further removed from the Catholic Christmas of Italy than from the Protestant Christmas of Germany, from which it may perhaps differ in details of church ritual but not at all in its character of a family festival.

Nevertheless, the climate of Germany did not produce Christmas: it only helped to give it its character. All the related climates of the Northern zone have produced such various ways of celebrating Christmas as are to be found in Germany, Scandinavia, and England. Although the German *Weihnachten*, the Swedish *Julfest*, and the English Christmas have a common Northern atmosphere which distinguishes them from the Italian

*Natale* and the French *Noël*, they also differ greatly among each other in their customs. But it would be foolish to try and explain these differences—embodied, for instance, by the Christmas tree, the *Julklapp*, and mistletoe—by climatic conditions in Germany, Scandinavia, and England. In other words, one must beware of trying to build up a theory which traces everything to the climate.

All life on earth as revealed to us in all its phenomena is the result of a conflict between heredity and environment, and this applies to the plant, animal, and human world. An important section of this environment is the climate; there is no activity of life that can evade it. Thus it has a share in shaping all the phenomena of life, even the spiritual; but only a share. It is important to find out what this share is, but it is just as important to know its limitations.

#### WHAT IS CLIMATE?

By "climate" we mean the meteorological conditions of a geographical region. We speak of "weather" when we mean the total atmospheric conditions of a given time, while the climate represents the constant *type* of weather discernible throughout all atmospheric changes. In Germany severe winters interchange with mild ones; some winters are snowy, some rainy; there are dry springs and wet springs; summers with many thunderstorms or hardly any at all. But always there are winter and summer, spring and autumn; and the summers, even the coolest ones, are always considerably warmer than even the mildest winters. This change, and a certain basic nature of the seasons, are the characteristics of our temperate climate. In Hamburg as in Vienna, the weather has more "moods" in one year and less in another; but this does not alter the essential difference between the oceanic climate of Hamburg and the continental one of Vienna. The oceanic climate always has less differences in temperature and more humidity than the continental one, in which the difference in temperature between even a

mild winter and a cool summer is greater than that between a hot summer and a severe winter in Hamburg. Thus in the last analysis the word "climate" indicates the annual type of local weather.

However, to try to express the climate of a place in every respect by average figures would lead to a distorted picture. In one district, the hottest day in the year may have a temperature of 16° centigrade and the coldest one of 6° below zero; the average figure would be 5°. In another region exactly the same average figure of 5° would be arrived at from the fact that the hottest day showed a temperature of 40° and the coldest 30° below zero! The latter would be the case in an extreme continental climate, the former in a pronounced oceanic one; as types of climate, they are directly opposed, although the average annual temperature shows nothing of this at all. So we see that climate cannot be reduced to a mathematical formula. Figures prove and illustrate that which must be characterized by words.

One of the items which must be included in this characterization is the soil. Although most of the weather is formed in high altitudes far away from the soil, that is, in the troposphere and perhaps even in the stratosphere above that, man, together with all plants and most animals (except birds), lives his life in the geosphere immediately above the ground in which the minerals of the earth's surface also lie. Ground mist, for instance, may affect a local climate very unfavorably. The radium emanation of the soil probably also has an important effect on the creatures of the geosphere. Moreover, the vegetation is essential to the climate; forest and meadow, heath and moor, sand or bog, have quite different effects upon the climate.

#### THE INHABITED WORLD

In our study of climate and man we must first consider the *oikoumene*—that part of the earth inhabited by man. On land it ends approximately at the polar circles. On the Northern Hemisphere it reaches a little further, about as far as

70° latitude; on the Southern Hemisphere it does not even reach up to the polar circle, ending at 55° latitude. It does not seem as if the progress of civilization in such things as heating, lighting, and transportation will be able to bring about great changes in this respect.

To these limits of latitude must be added those of elevation and foundation. The utmost height inhabitable by man ends at four to five thousand meters above sea level; on an average, however, the limits are much lower, the settlements in Tibet and the Andes forming exceptions. For the greater part of the earth, the altitude of 2,500 meters may be regarded as the limit for permanent human habitation. Finally, man needs terra firma to exist on. He can travel on the water and he can swim in it, but he cannot live in or on the water. Continents and islands are his *oikoumene*.

With regard to the phenomenon of culture we must also make a difference between the virtual and the actual *oikoumene*. Those people living beyond the polar circles, above an altitude of 2,000 meters, or on a multitude of tiny islands, are Diaspora of the human race. The compact masses of the earth's population are concentrated on the large continents between 55° northern and 45° southern latitude at an altitude of 100 meters below to 1,000 meters above sea level. By far the largest part of this population inhabits the vast low plains in which nine tenths of the great cities of the earth are to be found. To put it differently: the regions at the polar circle, altitudes of more than 1,500 meters above sea level, and remote archipelagoes, *can* be inhabited, and there have always been people who have inhabited them. But they are the exception.

Nevertheless, the zone lying on the outer fringe of the "compact" *oikoumene*, the earth's frontiers of habitation in horizontal, vertical, and continental respects, are of exceptional importance for the phenomenon of culture. The people living there are frontiersmen in the widest sense of the word, without whom it is difficult to imagine certain cultural

possessions and cultural traits. They are in a way pioneers of culture. Their influence cannot be properly grasped without looking at it from the point of view of "border vitality," a biological fact which applies alike to plants and animals.

#### CLIMATE AND SURVIVAL

Many plants and creatures have *one* adequate climate, in which alone they can thrive. There are comparatively few species of plants and animals which are indifferent to climate and thrive equally well anywhere. In the case of plants, this is probably true only of the very lowest forms (such as algae and mosses); in the animal world we find insects, such as mosquitoes, in tropical jungles as well as under the midnight sun. Both flora and fauna differ according to this adequate climate; and the further we go, the more we also meet with entirely different human varieties or "races."

If we transplant a plant or creature into a foreign, inadequate climate that differs greatly from its adequate climate, one of two things may happen: either it perishes or it adapts itself. If it adapts itself, it changes. This process of change very often consists of certain former attributes becoming stunted and new attributes developing. For many plants and creatures there is a border line near which they must, so to speak, do their utmost to survive. If they succeed, they often do so by becoming stunted, by "pauperiating," or, on the contrary, by developing extreme attributes, "luxuriating." But in by far the most cases they will pauperiate in certain respects and luxuriate in others. An example of this is the flowers in the Alps: in alpine flora we find varieties of lowland flowers which are definitely stunted in growth but whose blossoms excel by the brilliance of their colors. Not always, however, are the pauperiating and luxuriating attributes so obvious. Often mere functional changes take place which are revealed only by careful observation or by chance. The plant or creature may grow, blossom, and mature as before; but perhaps its number of descendants de-

creases or its susceptibility to disease increases, or its fruits have a different taste.

Climatic conditions at first cause non-hereditary changes. The tanning of the white man's skin by the sun is a common example of this. The tanning may last for decades as long as his skin is exposed to strong sunlight. If he returns to a region with less sunlight, his tan disappears. And however sunburned a Northerner and his Northern wife may be, they would never produce anything but children with a pink-and-white complexion which only tans in the sun. There are many such attributes which last only as long as the conditions under which they arise.

Whether there are hereditary traits which are produced by climatic environment is questionable from a scientific point of view. But it is possible that there are hereditary traits which are not apparent or made use of until another climate stimulates them to full development. Thus two kinds of new attributes and traits might appear in a new climate: first, such as are produced *by* the climate and exist *in* the climate without being hereditary; secondly, such as were latent but become manifest only *through* the climate. The fact that the red China primula can also have white blossoms does not become evident until one places it in a temperature of more than 30° centigrade. The ability to become brown is a hereditary factor of white skin, just as the ability to bear white blossoms is a hereditary factor of the China primula; both these abilities, however, require conditions of environment (sunlight; high temperature) in order to manifest themselves. But where these abilities are lacking, no conditions of environment can ever produce them. A scarlet geranium will never bear white blossoms, even at 30, 50, or 60°; it will only wither and die.

#### BIOLOGICAL CHANGES

Migration is probably based largely on instinct, which urges creatures to seek that environment in which they can develop their latent qualities, although we have no scientific proof of this. But

when a change of domicile, for whatever cause it may take place, leads creatures—thus also human beings, peoples, tribes, groups—into new climatic conditions, two things will happen: attributes hitherto manifested will recede because the new climate no longer requires them, and latent qualities will make their appearance under the stimulus of the new climate. Every true acclimatization shows these two phenomena. The total heritage of the organism does not change, but hidden and revealed qualities are shifted. This shifting can essentially alter the appearance of the creature. And the demand for the creation of a new equilibrium between the latent and the manifested can be so violent that the creature cannot survive it: the climate turns out to be absolutely inadequate for this creature. But it can just as easily happen that now for the first time it finds its adequate climate, and then it flourishes better than ever before. Of course, one of all the intermediate steps between these two extremes may occur, and it remains uncertain whether the creature has sacrificed more or gained more. The most tragic case is that of the individual creature developing all kinds of luxuriant attributes while the species as a whole becomes infertile and dies out. This is the case with those of the ancient peoples whose mental productivity was paid for by the decline of their generative vitality.

Every change of one climate for another is a risk as well as an opportunity. Have we any criterion by which we can see whether this risk was worth while, whether the climate is adequate to the race, whether the new climate is *still* adequate or whether it is now adequate for the first time? Yes, we have such a criterion: it is the ability to exist as a *people* in the new climate. It is not the survival (and propagation) of so and so many individual little groups of a Diaspora which is the mark of success—only the survival or the new formation of a whole people is the criterion. The principle of relationship between race and locality can be formulated as follows: the ability to form peoples and to live as such is the

soundest standard by which to judge whether a race has found its adequate location.

#### LATINS AND NORDICS

The Mediterranean race, for instance, has formed its nations almost entirely between 30° and 50° northern and between 20° and 40° southern latitude. In the subtropical and warm temperate belts outside of these zones, the Mediterranean race is to be found only as Diaspora, national minorities (the Belgian Walloons, the Gaelic Irish, the French Canadians—all, characteristically enough, in the southern parts of their respective countries), or strongly intermixed with natives (Brazil, Mexico). The zones adequate to the Mediterranean race end almost exactly where the adequate zone of the Nordic race begins, viz., 45° in Europe and 40° in North America.

Related blood, related languages, related attitude result in related valuations of life, and it is around the axis of these valuations that all that revolves which we call "culture" and "civilization." Thus, for instance, all Nordic people (Germans, Netherlanders, Scandinavians, Anglo-Saxons) have a distinct desire for cleanliness and comfort, a desire which the Mediterranean race does not possess to such a degree. The latter, in turn, have a highly developed sense of elegance in dress and of polished manners.

Is climate responsible for this? In some respects perhaps: the Nordic desire for comfort can certainly be traced largely to the harsher Northern climate, which has made home life the standard form of existence. On the other hand, the manners and clothes of the Latins just as certainly reveal the voice of their blood. That which links up Shakespeare's *Hamlet*, Goethe's *Faust*, and Ibsen's *Peer Gynt* when compared with Torquato Tasso and Gabriele D'Annunzio, Corneille, Voltaire, and Zola, Cervantes and Calderón; which distinguishes Milton's *Paradise Lost* from Dante's *Divine Comedy*, Dürer, Rembrandt, Breughel, and Hans Thoma from Titian, Raphael, Velasquez, and Manet; which sets Bach and Beethoven apart

from Palestrina and Verdi—all that can, if at all, hardly be reduced to a single formula, least of all to a climatic formula. The annual isotherms and rainfall have certainly not produced a *Faust* or an *Eroica*, a *Sistine Madonna* or a *Don Quixote*. But who would doubt that those Northern works of art are dominated by a somber gravity, by something opaque and mysterious, something incomprehensible and veiled, that reminds one of their long dark seasons, their so often cloudy skies, their frosts and fogs? It is hardly a coincidence that in German art we are most likely to find gaiety and light among the more Southern exponents—the Austrians Haydn and Mozart, for example—and that such Northern exponents as Kleist, Hebbel, and Storm seem so characteristically to mirror, even in the style of their language, all that is harsh, severe, stark, unfulfilled.

#### NORTH AND SOUTH

Here we come to one of the indisputable facts concerning the influence of climate upon the life of all nations and thus upon all culture: the contrast between North and South. This contrast is ubiquitous: it exists on the globe as a whole and in every continent, as we have already shown; but it also permeates every nation. Everywhere it is the Northern parts of a nation which differ from the Southern parts, and everywhere these differences are similar. Thus the Southern countries of Europe as a whole differ from the Northern countries in a manner analogous to that in which the Southern part of every individual Southern or Northern nation differs from its Northern part. The Neapolitan and Sicilian differ from the Florentine and Piedmontese in a similar way as the Viennese from the Hanoverian, the Provençal from the Breton, the Fleming from the Fresian, the Andalusian from the Catalan, the Englishman from the Scot, the Cantonese from the Pekingese, the Virginian from the New Englander, although, on the other hand, the Englishman seems to resemble the Hanoverian, and the Catalan the Provençal. Seen as a whole, the North-South symmetry is

repeated like the variations on a motif. What is this difference between North and South?

In the northern part of a territory the prevailing characteristics are those of soberness, austerity, calmness, of patience, endurance, severity, of consistent reasonableness and will power; in the southern part they are those of liveliness, excitability, emotionalism, imaginative power, of easy-going slackness or sudden flaring up. Within each nation, the population of the North is more practical and reliable, but more reserved; that of the South more artistically inclined, more affable and loquacious, but more unstable. It is probably the form of existence imposed or permitted by the climate which nourishes this difference. For, all over the world, the further removed a place is from the equator, the cooler and duller is its climate, and the longer does winter last. Darkness, cold, and wet in turn force man to spend more and more time in an artificial indoor climate and the harder and more tenaciously must he work to wrest his means of existence from nature.

"DOLCE FAR NIENTE"  
VS. ORGANIZATION

Life in regions relatively more southern, i.e., closer to the equator, can remain closer to nature. Man does not require as many technical devices to live tolerably well, indeed, quite comfortably. The *dolce far niente* of the South, the ability to let things slide and to let oneself go, are things that the Northerner has little of. He must do much more to be able to live, work, even rest and make love. Further south, even urban life can be carried on to a great extent in the streets and squares; further north it has to retreat more and more into houses, rooms, and halls. But "doing things"—daily, hourly, incessantly—means being educated toward organization, planning, providing, precaution, patience, consistency; these are the traits which serve order and administration. Hence economic, military, and bureaucratic qualities always thrive better in the North; in the South,

work of a free, more easy-going, artistic, or entertaining nature is better performed.

Here climatic environment is also sometimes mirrored in great political trends. Tough, tenacious Piedmont led the unification of Italy, as Prussia did that of Germany; Scottish Calvinists were victorious over "merrie old England" and put their stamp on modern Britain; the Russian Empire was created from the North, just as the Chinese Empire was reorganized and held together from the North. Politically speaking, the southern inhabitants of a country represent the inactive yet restless, often revolutionary elements. Of course, this must not be taken to mean that every single revolution must necessarily originate in the south; but seen as a whole the atmosphere of the south is more favorable to revolution, that of the north to evolution, the former to revolt, the latter to reform.

IS IT RACE OR CLIMATE?

The objection has been made with regard to this contrast between North and South that, at least in Europe, this outwardly apparent contrast actually hides a racial contrast. The relatively northern parts of almost all countries, it is claimed, consist of inhabitants largely descended from Germanic immigrants. And the "northern" characteristics which we have mentioned could therefore be traced to this fact rather than to the relatively more northern climate. This would apply to Germany as well as to France, Italy, and Russia. Quite right; but why is this so? Why have the Germanic peoples survived everywhere in the northern parts of southern countries, and why has a strong southern, Mediterranean strain survived in the southern and southwestern parts of Germany? Does not this fact in itself reveal the relationship between race and climate? Not only the absolute south, but even the relative south consumes the northern racial reserves. The actual Mediterranean world has, indeed, become the historic mass grave of northern Germanics; it is only in the relatively northern parts of the Mediterranean countries that they have

to some extent been able to survive racially, although not as peoples.

Once again we see here the striking relationship between race, climate, and people, a relationship which has influenced culture and history. Races can on the whole thrive as peoples only in definite, adequate climates. When they migrate into other climates, they perish, at least as peoples: they must intermix with other races to found new peoples in which that racial element gains the upper hand in each geographical region which finds the most adequate climate.

#### CONQUERORS OF NATURE

A certain regional climate creates, so to speak, its own countryside and, as a creature of the climate, this countryside in turn helps to form the mode of living and the sentiments of the clans, tribes, and peoples living in it. In such things as desert, steppe, coast, forest, moor, heath, island, glacier, pasture, countryside and climate appear as an indissoluble unity, especially with regard to their influence on the creatures existing there. The creature "man," however, is distinguished from all flora and fauna by the fact that he is able not only to absorb certain formative influences from his environment but to give new shape himself to the influences and, above all, the impressions received from his environment. All human beings do this unconsciously, and a few creative spirits do it more or less consciously, whether they are leading in the technical shaping of the inhabited countryside or whether they are artists who recreate the countryside in paintings or poems.

One must not underestimate the role of these artistic creators as true conquerors of nature for man. We are faced here by the peculiar fact that even harsh climates, which man used either to avoid whenever possible or which he made endurable by his scientific feats, have been rendered attractive through the artist's appreciation of the scenic beauties to be found there. This was the case during the last two centuries with the alpine and the maritime climate: poets and

painters opened our eyes to the beauties of mountain and sea, and this in turn taught us a new appreciation of their climatic attributes and led us to resort to them for holiday and convalescence purposes. Ocean traveling and sea-bathing, mountain climbing and convalescence at high altitudes, are characteristic elements in the occidental cultural evolution of recent generations. Moreover, they represent new conquests of nature just as much as the steamship or motor road, the dam or the dike.

Climate is the purest form of "nature" to confront culture of all kinds. It is the peculiar destiny of man to belong to both these sides of creation and not to be able to detach himself from either. His inventive genius has done wonders in enabling him to endure climates which it would otherwise be impossible for him to survive. This development reaches from the invention of the first fire-producer, indeed, from the first preservation of fire, to electric light and modern refrigeration. As an individual or in small groups, man is able today to survive in every climate of the globe for a considerable length of time—in tropic jungles and on polar ice, on the ocean and soon, perhaps, on Mount Everest. But in the form of existence which nature has stipulated for him and which alone can produce culture, as a *people*, he is largely limited by climate.

#### THE ATLAS SPEAKS

All the peoples of the earth have their own adequate climates in which they can thrive. At the outer fringes they may sometimes be capable of producing the utmost in human creative power and vitality; beyond these fringes they somehow perish, degenerate, or are absorbed by other peoples. By the colors in which an atlas shows the Nordic, Latin, Slavic, Malayan, Indian, and other races, and by the compactness and sharply defined outlines of these colored areas, we can tell which climates are adequate for which races. To this day these colored maps are the most accurate reflection of the relationship between climate and culture, geography and history.

In studying these maps we are surprised to find how often, at important places, the areas indicating the various religions coincide with those indicating the races. On the European continent the contrast between north and south is again highly evident. We find on the whole that the Latin South of Europe belongs almost uniformly to the Roman Catholic faith, that the Germanic North belongs almost equally uniformly to Protestantism, and that nine tenths of the Slavic East belong to the Orthodox Church.

Does this indicate a direct dependence on climate on the part of religion? Are man's thoughts on even the most ultimate things of life conditioned by annual temperature and humidity, by barometrical and atmospheric figures? Similar absurd simplifications were once resorted to by the theorists of Marxist materialism when they tried to trace the Reformation to economic causes, to market and trade crises. Science does not follow them on such paths. That which is expressed by the peculiar coincidence of North and South with Protestant and Catholic is not an individual relationship between faith and climate but a total relationship in which the peoples concentrated in regions of adequate climate show characteristics influencing their religious life.

#### RELIGION AND CLIMATE

The Nordics with their northern characteristics and living in northern regions, desired to experience Christianity in a way which has found expression in Protestantism, while Catholicism was spiritually adjusted to the Mediterranean racial traits of the Latins in their southern regions. The German exceptions to this rule confirm this; for it is those German regions with comparatively the strongest Mediterranean strain and the most southern climate, namely, those of the Rhine and of Austria, which represent the largest single blocs of Catholicism.

All this has nothing to do with the question whether religion is a creation of the human spirit, like art, science, and philosophy, or whether it is a supernatural revelation to the human spirit. For

those who are convinced of the latter must admit that the receivers of such a revelation are only flesh-and-blood human beings from which the first community of believers is formed with all its earthly limitations—even the most divine message is transmitted to creatures of this world who, in the make-up of their blood, in the soil on which they live, and in their inherited gifts and talents, are utterly conditioned by the earth. The Southerner feels his worldly as well as his transcendental, heavenly love differently from the Northerner; his idea of happiness in life is just as different from the Northerner's as is his idea of heavenly salvation and the paths by which it may be acquired.

Moreover, every religion has somehow or other to take the paths of nature into account—whether they appear to it as unimportant, an aberration that must be overcome (Buddhism), as divine creation (Christianity), or as the essence or body of divinity itself (Pantheism). On the other hand, nature presents entirely different aspects to man according to the region he inhabits. To the people of the Mediterranean its face is pleasant and familiar, while the Northerner knows it chiefly in the form of storm, rain, and cold. To those to whom religion is not only a dogmatic abstraction but a rich, living thing, it must seem perfectly natural that the form in which it lives is influenced by the natural environment of the believers.

#### ARTIFICIAL CLIMATE

Returning to our atlas, we notice another conspicuous circumstance: on almost all maps black dots are strewn over the colored surfaces—the towns.

In them, remoteness from nature, the so to speak denaturation of culture, reaches its apex. A certain remoteness from nature is common to all mankind; nowhere do we find him as "pure" nature, for then he would be an animal. What distinguishes man is his ability to detach himself from nature and to make nature serve him. Every village, as well as every primitive hearth or loincloth; and not only every garden or park but



every meadow, every field, every forest, is an artificial product, a product of culture. Only the town dweller, in his extreme remoteness from nature, likes to call all this "nature."

That which has so extremely denatured the cities is their loss of climates which the "country" has retained practically in its natural form. In the cities, even the climate has become artificial. In those places where the people of the cities spend the major part of their existence, it no longer contains such important natural ingredients as ultraviolet rays; the geosphere of the cities is chemically polluted, and the radioactivity of the earth is blocked by asphalt and tar paving.

Here again the question arises whether the city climate changes man. As yet we know very little in this respect; after all hardly more than a generation has gone by since we have known radium and its emanation or the organic effect of ultraviolet rays, and that motor vehicles have been poisoning the air we move in and breathe, in addition to the smokestacks poisoning the troposphere over our roofs. It is possible that the effect of all this on the organism is much more far-reaching than we imagine today; it remains for science to discover whether this is really the case. But it is probable that the outstanding cultural achievements as well as the outstanding cultural dangers of the many vast cities of the nineteenth and twentieth centuries are mainly the result of the form of life which the city, from the point of view of environment, has forced upon the human masses confined in it. Whether the results are valuable or harmful, they have little to do with climate as such.

On the other hand, it is an open question whether it is less the style of living than the artificial climate itself which has reduced the ability of propagation in the

cities and, as has been proved, in proportion to the growth of the cities. Science will have to answer this question, too. At any rate, wherever generative harm is caused by a climate, as is the case, for instance, with people of northern racial extraction in tropical and subtropical lowlands, an insurmountable barrier is raised to the ability of a people to form a culture. Between the tropics, no pure Nordic peoples can survive as such, nor are Nordic cultures possible; here a certain cultural form and a certain climate exclude each other; an attempt to make Nordic history in this zone would be condemned to failure. Nordic people could, at the very most, direct the history of other peoples or maintain, alter, or destroy foreign cultures here. This touches upon problems of colonial climate, colonial culture, and colonial history—a highly important subject in itself.

Deep-rooted culture and history which are true to the nature of the people, however, are bound up with a racially adequate climate. This is an important discovery of our century. Not only has it enabled man to realize to what extent he is conditioned by nature, but the people as a whole has discovered itself to be a natural phenomenon. Even its intellect, and all it may have absorbed as the work of great individuals, do not float in an arbitrary stratosphere. Culture and history can only produce durable achievements in an atmosphere in which freedom is tempered by consideration for environment. Those who disregard nature around us and in us are bound to succumb to it. Our domination of nature through civilization rests on the knowledge of nature's laws. True mastery proves itself by self-confident self-limitation. Correct action has no more reliable servant than correct knowledge; and all knowledge can have no higher aim than to be correct so that ensuing action may be correct.