

THE CLIMATES OF THE WORLD, IN REFERENCE TO THEIR EFFECTS ON MAN'S GENERAL WELFARE AND DESTINY

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At the present hour, when millions of human beings are leaving their homes in Europe, or contemplate doing so, for countries which may or may not possess a climate similar to that which gave them birth, it cannot fail to be perceived that many interesting inquiries are thereby laid open to science, on which none but the physiologist can enter with advantage.

If the race of man, then, in all its varieties, affords general expression of the existing climates of the world, in reference to the circumstances which contribute to healthy organization; if one climate maintains, while another modifies more or less the characteristics of human beings, as is undoubtedly the case, it cannot be out of season to make this investigation: With what result to his own physical conformation and moral character, and more especially to that of his descendants does man, born in a congenial climate, emigrate at random into different zones?

Having examined this subject in its many bearings, both by collating the written observations of travellers made cursorily without any immediate scientific object, and by questioning intelligent persons from our colonies, and other newly formed states, I premise with confidence that it is one which is most important and curious. To take a common example; - What a diversity of effects must obviously arise from one member of a family taking up his permanent abode in a portion of the American, and another in a part of the Australasian continent. Both regions afford climates which are called delightful and healthy; but their separate influence on the organization of the European is already perceptible. Indeed, it has been forcibly argued that man cannot travel out of his own zone without entailing extinction on his race. Be this as it may, an inquiry into the subject of isogenetic¹ or congenial zones is of sufficient moment, under the existing conditions and inevitable redistribution of nations, to give basis to a branch of science; nor will it be passed over without due consideration in this series of papers.

The classical ethnographer is of opinion, that the human race is essentially migratory; that while it has enjoyed the character of being so from its origin, it is in obedience to the same instinct that it persists in pursuing its migrations into lands still unsubdued or unpeopled. But if it were true originally that the human race, being of common stock, fulfilled one of its great ends in spreading itself over continents, does it follow that the physical conformation of man is calculated to endure these changes of climate indefinitely? The race of man, physiologically considered, has its limits, like animal beings generally, many species of which have disappeared, some within our own time. Granting then, that after one or more migrations a particular race has become acclimated, as the Saxon, the Dane, and the Norman in this country, is it to be supposed that further migration, beyond our isogenetic zone, is in accordance with natural laws, especially at this not early period of human history, when disease to so large an extent is hereditary, and early death so general, as to mark an epoch in man's limited career?

In answer to these inquiries it may be assumed, that the type of man's physiological condition is expansive to a great degree, and that change of character in it is not incompatible with its integrity; but that, beyond certain limits, such change as is effected (by diversity of climate does hasten the fulfillment of the natural law of its extinction.

¹ I venture to introduce this term in order to mark the distinction between zones of equal geniality of climate, and those of like temperature, or isothermal zones, both of which differ from each other, and from geographical zones, as much as the magnetic differs from the common equator.

With these preliminary remarks, the subjects intended for discussion may be approached in detail.

Climate, it will be found, is intimately associated with the history of countries. The Olympic Games, the Greek drama, in common with the arts both of architecture and sculpture, are in some degree due to the influence of a cloudless sky. Rome owed her exterior splendours, Italy her palaces and unrivalled frescoes, to the same southern clime; while the vivacious Frank, rejoicing in an atmosphere scarcely less pure, delights in the imitation of Athenian taste and Roman example, with their avenues, statues, and fountains. But the Englishman, enjoying equal, if not greater advantages, all of which are due to the climate of his native country, appeals neither to sun nor sky; he is content to expatiate on the luxuriant verdure of his fields and hedgerows--on the perfection of his stock--on the breed of his cattle--on the manly character of his countrymen: and for the rest, he exercises his privilege of grumbling, however unjustly, at the ever-varying weather and leaden sky, through which these unexampled benefits are maintained.

What meaning, then, is to be attached to the expression, a good climate, in the wildest acceptation of the phrase? I Though the sun of Greece may have inspired the dream of an Acropolis, and its realization; and somewhat later, but in the same spirit, may have marked out the boundaries of an eternal city on the plains of Italy, - of what avail is it, if human welfare prove not commensurate in duration with the glories of Nature? But so it is; the greatness of the South has been due to other causes than climate: it has arisen from a combination of human elements, the admixture of races having mainly contributed to the great result, the enduring monuments of which, climate alone was unable to sustain. Yet, that some climates are better suited than others to the development of man - to the formation of his genius-to the growth of his physical powers-to the production of his supplies scarcely to be disputed. What country or region, then, beyond all others, has proved the most congenial to man; - and in what does its geniality consist?

Excellence of climate is that quality which secures to any country its aptitude for the maintenance of intellect, strength, and health in the highest perfection, and for the rearing and growth of the supplies best adapted to the support of man. Some may, at first sight, pronounce this definition to be too strictly economical--too exclusive of the pleasures derivable from sunshine and a perpetual spring. But who can dispute the supreme blessing of health? And when this is once admitted, it cannot but be allowed that food, one of its chief sources, must take a prominent place also among human benefits.

Nevertheless, it is highly probable that the custom of undervaluing--indeed, abusing this climate, boasts a high antiquity. King Charles the First, with true discrimination, was among those who saw the subject in its true light: he observed that in no other country was it possible to take exercise in the open air for so many days during the year as in England. And yet it has been reserved for the nineteenth century - that epoch of our scientific agriculture, of our success in sciences, in mechanical arts, in all that has its source in the intellect and energy of man, - to discover in how great a degree all this is due to climate.

Looking to exercise then as one grand source of health, let it be considered how many fine days, or portions of fine days, occur in all parts of England, however diversified, during the year. To the advantage our temperate climate thus affords, are attributable the vigour and symmetry of the men, and the corresponding, beauty and freshness of our women. What other country boasts its pedestrians, who have accomplished the feat of walking over a thousand miles in a thousand hours! Where else are we to look for a race of prize-fighters like that which, through moral, not physical influences, is now disappearing? To descend in the scale, to what but to the climate of this country is the perfection of the horse attributable; and not of the horse only, but every other kind of animal?

As a grazing and agricultural country, England can scarcely be surpassed; but it is unnecessary to do more than allude to the produce of her soil, whether vegetable or animal. If the superior excellence of our stock is attributable in the first instance to breed, no other influence than the climate could have perpetuated it; for the same stock, imported into less favourable regions, is known to deteriorate rapidly.

This utilitarian view may appear novel to those who have been in the habit of associating the spontaneous productions of the earth, and a perennial spring, with all that is desirable in climate - who, unaccustomed to the details of science, fall readily into the luxurious dream of the poet, in crediting the idea that the man of temperate zones can with impunity settle down within intertropical countries. But the true tests of a climate are seen in the quality of its productions; the constitution and temperament of the people living under it; the age to which they attain; and other circumstances of a like character, to which reference will be hereafter made.

This country owes its productiveness to the somewhat equable fall of rain which occurs throughout the seasons; to the moisture and warmth preserved to the land by a clouded atmosphere, which, by preventing a radiation of heat from the surface, tends materially to neutralise the effects which would else accrue from a high latitude. But these circumstances alone, while they might preserve it from becoming ice-bound during winter, like other countries of the same, and of still more southern latitudes, are not sufficient in themselves to create the truly temperate climate we inhabit; other causes, of a most admirable and unique description, are to be looked to, not only in characterizing our zone, but in extending its geographical boundary over a great part of Europe.

A lake of warm water, having a maximum temperature of 86 Fahr, in the Strait of Florida, stretches across the Atlantic, from Cape Hatteras to the Azores; its greatest breadth being 120 miles, and its entire extent equal to that of the Mediterranean Sea. The origin of this tepid lake, whose waters are directed ultimately to our coast, and the western shores of Europe, is the Gulf of Mexico-an enormous cauldron, measuring one thousand miles in length, and seven hundred in breadth; having above it a tropical sun, which maintains a very high temperature in its waters. From this great sea, both the name and source of the Gulf Stream are derived. After passing between Cuba and Florida, and taking the direction of the American coast, it turns eastward, preserving a mean velocity, from the commencement of its course to the Azores, of 38 miles a day; having a temperature of about 90 Fahr. above that of the surrounding ocean in the Strait of Florida, which decreases so gradually in its passage to the east, as to have lost only 50 Fahr. Opposite the south bank of Newfoundland, a distance of 1,300 miles, it still retains a heat of 80 or 100 above that of the adjacent seas, communicating its temperature to the superincumbent atmosphere.

The warmth diffused over the Atlantic Ocean by this means would be sufficient-such is the calculation-to raise the entire column of air covering France and the British Isles, on a winter day, from freezing point to summer heat - a fact which accounts for the comparative absence of ice in the North seas, and affords the true explanation of the mildness of our climate, and that of adjacent countries.

But, while its influence, by means of the atmosphere, thus affects a large extent of climate, the Gulf Stream itself washes our western shores. The waters of the Atlantic are still warm as they wash the coasts of Connaught, while their effect is perceptible along the shores of Norway, and to the very borders of the Arctic Ocean.

And lastly, among the tributaries of our temperate climate, is the south-west current of air, which is the prevalent wind of the northern hemisphere. Its gusts occupy the track of the Gulf Stream. They waft the warm moist air, arising from the contact and evaporation of its waters, over the coasts of Western Europe; they are felt in the same warm fitful gusts, from Cape Finisterre to the North Cape, as in the Atlantic, penetrating into the Baltic, and reaching to the Russian plains. It is the influence of this current which gives to the western coasts of these islands, from Cornwall to the Hebrides, almost the same isothermal line.

The continent of America, stretching as it does from pole almost to pole, and embracing an immense breadth of land, offers a striking example of a series of natural climates; while that of Europe, chiefly if not wholly owing to the influence of the Gulph Stream, enjoys a climate which is strictly exceptional. The parallelism of latitude then, so generally indicative of similar inland climates, fails to unite the opposite shores of America and Europe under the same zones. The countries of New York and Spain (situated in 40° north latitude), of the Canada and France (in 50° north latitude), of Labrador and Great Britain (in 55° north latitude), lie in the same parallels:

but the mean temperature of New York (5U° F.) equals only that of north Germany and the midland counties; of the Canada (40° F.) that of Norway, Sweden, and St. Petersburg; and of Labrador (32°) that of the North Cape. Indeed, such is the interference of circumstances, local as well as general, with the climate of a country or even district, that the isothermal line of mean annual temperatures has only a qualified value, and might be extended to the seasons and even months, without fully reducing all the differences which exist to a uniform scale.

It is in vain then to seek for isogenetic zones in the same parallels, or old divisions of the globe into frigid, temperate, and torrid zones; and even the isothermal line, as above stated, is not a strict guide in the inquiry. Countries lying within the tropics present every variety of climate; but though the mean annual temperatures of Europe are individually repeated among the mountain ranges and table lands of Mexico, it does not therefore follow that these two remote regions contain the same isogenetic zones. Experience proves the contrary to hold true. It is the boast of some travellers that man is enabled to live in every quarter of the world, amid that ill this he stands alone in the animal kingdom; but the physiologist corrects this error.

The native of Europe attains longevity, and his race becomes acclimated in Canada; but his life is shortened, and his race is cut off, in Mexico and the tropical regions around. On the other hand, the African finds a congenial climate in these latter countries; he is easily acclimated too in temperate, but perishes in frigid zones. In order, therefore, to map out the habitable globe into isogenetic zones, it would be necessary to institute a series of physiological inquiries, in reference, first, to the welfare of individuals who have migrated from one country to another; and next, to the physical and mental characteristics of their descendants. No other course is competent to determine that this or that climate has its duplicate elsewhere; and that man has a home in which the features of his race, and the productions of his native soil, can be preserved.

The influence of the Gulph Stream, which has made Europe an exceptional climate, blends a group of countries of very different latitudes into one isogenetic zone. The Danes, the Saxons, and the Normans, judging of them in a physical sense, have found a congenial climate in Great Britain, as well as the Celts, who cannot be said to have deteriorated in health during the many centuries they have inhabited this country and Ireland. Therefore, in mapping out an isogenetic zone for England, the countries of Europe, whose shores are washed by the Gulph Stream, and those lying along the coast line from Spain to the North Cape, should be included, besides such others, situated inland, as have from time to time supplied our population, and whose descendants embrace the same hardy races as still flourish in these islands; races with whom an interchange of region might be further made without material alteration in the physiological characteristics of their people. That the native of Great Britain, and his descendants, can live in even the more remote parts of Europe, in the south and east, there is little doubt-though not without change of temperament: but this subject will be illustrated hereafter, when the effects of climates, situated beyond our zone, on the Anglo-Saxon constitution, are examined.

Experience shows that the isogenetic zone of these islands is not confined to the limits thus marked out in Europe, but that it stretches across the ocean to Canada and her dependencies, and that it includes some of the northern states of America, to be specified presently. It is stated by eye-witnesses, that throughout the countries which extend from Newfoundland to the lakes of the American continent-Cape Breton, Prince Edward Island, New Brunswick, Nova Scotia, and the Canada-the natives of British origin preserve their characteristic features; not acquiring the atrabilious aspect, dark hair and eyes, of the United Statesman, nor his emaciated look, but retaining the fair complexion, blue eyes, and other traits of an Anglo-Saxon descent. Nor is the climate of these countries less favourable to the agriculture than to the man of Great Britain. If the cattle is smaller on the whole than at home, this must not be put to the account of climate, but rather to breed. The beef, unlike that of the States is usually fine and tender. The horse, if not yet bred equal to the English, is of a good kind, and capable of bearing great fatigue; it is often ridden thirty or forty, or even sixty miles without being fed; and will return in the same manner the next day without injury. The sheep thrive remarkably; and if tended with care, they maintain a rivalry with English flocks; and the same may be said of swine but these, if not attended to, become long snouted, and tall, more like greyhounds, and if left to range through the woods acquire great swiftness. All kinds of grain cultivated in the mother country thrive and ripen perfectly in these dependencies, and produce heavy crops, which are equal in quality to any in the world. Legumes, bulbous roots, above all the potato, indeed every kind of culinary

vegetable, arrive at great perfection; while every sort of fruit known in this country ripens equally well there, and is of excellent quality.

In no country do the inhabitants retain health and vigour to a later period of life than in British America; but the bloom of youth is, generally speaking, sooner lost than in England; a circumstance attributable in some measure to the hard life led in the colony, compared with that of the mother country. And the young arrive at maturity at an earlier period than in England—a physiological fact not to be disregarded; it is attributable to the forcing character of the climate, and is found to be cognate with similar phenomenon in the vegetable kingdom. It has been observed already, that the more southern portions of Europe, being outside our isogenetic zone, alter the temperament of the Anglo-Saxon; a change which maybe induced in the constitution of a family without any encroachment on type: and more than this, their climates produce the forcing effect alluded to, leading to early puberty in the human species, and in the vegetable kingdom producing a more rapid growth and maturity.

This is true of South Italy in relation to England; and yet more so of Calabria, where vegetation especially exceeds in luxuriance of growth that of adjacent and less southern regions of the same peninsula. In Canada the oldest trees do not appear to have exceeded a growth of two hundred years, judging from the number of rings; and the woodsman buries his axe in them at a blow: while in our own country a thousand years is supposed to be the age of many a tough and venerable oak. This, however, may be fallacious; the influence of a primeval forest on its individual productions has to be learnt. Still, the fact that Canada is more forcing in its climate than this country is indisputable; and it shews that a zone, though practically speaking isogenetic, does not preserve a precisely similar character throughout, but that one zone runs into another gradually.

The most genial climate in British America is that of Prince Edward Island. Fever is unknown there; and those who arrive with ague recover in a few days, often in forty-eight hours, without the aid of medication. Pulmonary consumption is so rare as to be seldom met with; in a word, there are few places where health is enjoyed with so few interruptions as there, a large proportion of the inhabitants dying from the gradual decay of nature. The average mortality is scarcely one in fifty; and large families are almost universal. The atmosphere is free from damp; a foggy day does not occur often throughout the year, the morning sun quickly dispersing the dews.

The climate of Cape Breton is somewhat similar to that of Prince Edward Island, but is visited with heavy fogs, which interfere greatly with its excellence. In New Brunswick and Nova Scotia the winters are severe; as likewise in Lower Canada; but they are milder on advancing further to the south-west, where the country takes a turn towards the lakes. As a general expression, the winter of the Canada may be said to last about four months. Though the cold is intense for nine or ten weeks, the air, dry and elastic, is free from the chilling moisture of a British winter. It is a season of hilarity to the Canadian: during its continuance he enjoys the exercise of skating, hunting, and driving over the frozen snows; for the air, which is a non-conductor of heat, being frequently without motion, the cold is unfelt. The summer is hot to excess, the thermometer standing at 100 F.; but showers from the southwest, sometimes with thunder and lightning, occur once in seven or ten days, and the wind shifts to the north-west, producing a delicious coolness. At night the air is clear; and the unruffled waters reflecting every visible object in the heavens, the moon, shining with a soft and silver-like brilliancy, exhibits a panoramic scene of the utmost beauty. In autumn the days continue warm, the evenings cool, attended sometimes by slight frosts at night; and there is but little rain. After a time, sunshine, frost, and rain, succeed each other, and the leaves of the forest assume every tint and shade of colour. The Indian summer follows - a brief season of frosts at night and sunshine by day.

It would be out of place to enter here upon the characteristic beauties of these vast regions, but not so to express the hope that they may not be separated from this country to which they naturally belong; forming, as they do, beyond all doubt, a part of one and the same isogenetic zone, and affording a legitimate outlet for our population. There exist other countries to the westward, Wisconsin, Iowa, and parts of Michigan, which, as far as is yet ascertained, belong to the same zone. In these the Englishman retains his fresh complexion, and enjoys the rudest

health. Ague occurs in the last, as in Canada among the newly settled districts, but in the two former fever is unknown.

In the north-east, the states of Maine, and probably New Hampshire and Vermont, ought to be included in our zone, but this is doubtful ground; since in those of Massachusetts and New York, which adjoin, those peculiar features of the United Statesman, or Yankee, which are the effects of a totally different zone upon the organization, are observable in a conspicuous degree, and will be notified hereafter.

It would be useless to enter on the discussion of climates within our own territory in the far west, those of the Oregon and Vancouver's Island. These countries are well known; they have been the seats of commercial enterprise from the establishment of Astoria to the present time, and have been described by the trapper, as well as by the United States expedition: but the tide of emigration has not flowed in that direction; therefore little is to be gained by opening the question of their fitness for British settlers.

Such then is the extent of a zone of like productiveness, of which the British isles form the center; it stretches over a large portion of Western Europe on the one hand; of British America, including portions of the United States, on the other: in all probability it encircles the northern hemisphere, though in a zig-zag direction, and in a belt of varying breadth.

But the zone here mapped out is continuous. It includes none of those temperate climates between which and itself there is a break; climates attained by elevation above the sea-level, such as exist in the table-lands of those high mountain ranges which are found in torrid zones. The claims of such to be considered as detached portions of our zone will be noticed in another paper.

But the great question for Europeans, especially for the colonizing race, the Anglo-Saxon, is this: Is it possible for the native of our temperate northern zone to cross the equator, and find a zone of like geniality and productiveness, one in every sense isogenetic, in the southern hemisphere? This inquiry has to await a practical solution, for now thousands are annually passing from this country to our antipodes in quest of a new home. Meanwhile, they are utterly ignorant of the grounds on which they proceed, and their fate is to become subjects of a great experiment. I shall show in a concluding paper, that as respects a large portion of the Australasian continent, the question has already in a great measure settled itself; sixty years have sufficed to determine the point, and that with a significance scarce less emphatic than the solution of a similar question has proved, as to whether the territory of the United States of America is strictly isogenetic with our own zone.

The inquiry into the character of the southern hemisphere will be limited to the more promising countries, and especially to the temperate portions of New Zealand.

After perusing the works of naturalists like Dieffenbach, and the observations of Dr. A. S. Thomson, on the climate of New Zealand, not to mention the important remarks of Cook, and the numerous voyagers, resident missionaries, emigrants, and others, who have uniformly afforded the same testimony in its favour, the general reader, probably, is satisfied that all further inquiry as to its suitability to the English constitution is uncalled for.

The observations of Dr. Thomson on the influence of the North Island, in the production and prevention of disease among emigrants from this country, refer to the nature of the climate, and to the health and mortality among the troops of New Zealand, compared with England and her other colonies. The climate he reports to be unexceptionable; the mean temperature higher, the range of the thermometer less than in England; the atmosphere more moist; its pressure very similar to what has been observed in London; indeed, it appears from him, and the concurrent testimony of many, to have nearly all the excellences, and few, if any, of the defects of the climate of England.

In one year, 1848-9, out of nearly two thousand troops, one per cent. died of disease, and in the following year a still smaller number-giving an average mortality, during stationed in Great Britain, the mean annual mortality from disease is 14 per 1,000. Some part of the reduced

mortality may be attributed, says Dr. Thomson, to New Zealand being an open country, with no large and densely peopled towns to generate disease. The annual ratio of mortality from fever in New Zealand was 0.3 per 1,000; in Great Britain, 14: the number attacked in the former country was 13; in the latter, 75..

But New Zealand enjoys a remarkable exemption, according to the same authority, from febrile diseases; such, when they exist, being generated by filth, and not by the climate or soil. The only fatal case among the troops appears to have been accompanied by internal organic disease. Ague, even in the swamps and low banks of rivers, is unknown. Scarlet fever has appeared in the town of Auckland, but no other eruptive fever. Those affected with pulmonary complaints have been one-third less than among the same class in Great Britain. The number of deaths from the same cause is very low, of which the following table affords a striking proof:

TABLE

	Annual ratio of mortality per 1000 among the troops from all diseases	Number of men out of attached by pectoral complaints	Average number of deaths out of. me, during a year from pectoral diseases
Malta	18	120	6,0
Ionian Islands	28	90	4,8
Bermuda	30	126	8,7
Canada	20	118	6,7
Gibraltar	22	141	5,3
Cap of Good Hope	15	98	3,0
Mauritius	30	84	5,6
United Kingdom	14	148	8,0
Australian Continent	11	138	5,8
New Zealand	8	60	2,7

Not merely the troops, but the soils of missionaries who have been brought ill in New Zealand, enjoy a remarkable exemption from consilium- a result which can be attributed, says Dr. Thomson, to no other cause than the climate: an opinion in which he is confirmed by the surgeon of the 65th regiment, Mr. Prendergast.

Diseases of the brain and liver are not more frequent than in England; those of the stomach and bowels are less so; but dropsical effusions are more common; the mild nature of the climate leading- to chronic, while that of England. In the same cases, would have led to acute inflammation. Rheumatism is but slightly known; abscesses are less common; but ophthalmia is more frequent than in England.

In the report in question is the following remarkable passage - In a memoir which has no other object than simply to record the facts, it may appear out of place to enter into any speculation; but having, seen that disease and death are less frequent in New Zealand than in England than, the question naturally arises, Is the duration of man's life more extended? I should certainly say that it was, not only from the results adduced in this paper, but also from the circumstance that the mortality among children under five years of age has been found to be very low, and from the genial nature of the climate giving to old men an ease and comfort which no wealth nor artifice can produce in England.

There is a question which time only can determine: Will time European population, born and brought up in New Zealand, possess the mental and bodily energy of those reared during their childhood in Great Britain? Will not the genial climate, and the ease with which the soil yields its fruits, produce a population similar to that found under the cloudless skies and tropical temperature of the shores of the Mediterranean!"

A climate productive of the advantages thus described appears almost to exceed the standard sought after; and if one were in search of perfection, of the ideal of a climate, such might no doubt be found in New Zealand.

But, in seeking an isogenetic zone of Great Britain at the antipodes, it is not a question of perfect climate, but of summer and winter like our own; of seasons in which certain fruits of the earth just ripen, and in which ice and snow lie on the ground. In the northern island of New Zealand, the mean of the coldest month is from 47° to $54^{\circ} 5'$, while that of London is only 36° F.; that of the warmest, $70^{\circ} 5'$ to $73^{\circ} 5'$, while that of London is 62° ; that of the year, $57^{\circ} 5'$ to 64° , while that of London is 50° F.: in fact, the climate is rather that of Madeira than that of England - with one great exception, that the wind blows with almost unabating violence, over all the islands of New Zealand, throughout the year: a natural phenomenon which renders the air fresh, and is necessarily productive of health.

The middle island of the New Zealand group approximates much more in its climate to that of England. Perpetual snow covers the vast mountain range which runs along its western coast, and is known to lie on the ground occasionally in the plains; so that, while the summer heat is temperate, as in the west of England, there is also a winter characterized by frost. The southern island, though occupying higher latitude, enjoys a milder climate than the middle, but has the same characteristics as its neighbor. In these, then, far more than in the northern, are to be found the characters corresponding to our zone; and, as far as human foresight can determine, it does appear probable that an isogenetic zone in the southern hemisphere offers itself to our population- zone in which the features of the Anglo-Saxon race, at the end of five centuries, might, if the race were preserved pure, be the same as should continue to exist in the parent country.

But to the curious inquirer there are problems of a grave kind yet to be considered on this subject, some of which will be determined in the course of three or four generations, while others must remain unsolved until a far remoter period. I am prepared to show, that the low mortality among children as well as adults, and the extended duration of man's life, are circumstances which, however favourable in themselves, afford no more ground for the conclusion that the northern island of New Zealand is isogenetic with the British Isles, than are Madeira, or Alexandria, or Rio Janeiro, in all which life may be more secure, both in childhood and age, than in this country. At present, as far as observation has found opportunity to penetrate, it is found that the offspring of Anglo-Saxon parents, born in New Zealand, resemble the parent stock, and do not, as in the vast regions of Australia and the United States, degenerate on reaching the age of puberty, but go on to acquire that full development which belongs to the youth of England.

This, then, is satisfactory; the race can be reared and preserved; but is not its purity endangered? Is it not certain that it will be extensively blended with the Maori? On the shores of Cook's Straits, this admixture has largely taken place already, from intermarriage with the sailors and the daughters of the soil, and the result is said to be a race superior in beauty to the parents on either side; but such is often the result of a new cross at first, and three or four generations must elapse before the Question can be solved, as to whether improvement or deterioration is to be the effect of this intermixture. This, however, may apply only to the states of the northern island, in which the natives abound, and where possession of the soil may give rise to such admixture of the two races. In the middle island, the aborigines are few; they are in the position of labourers, and the land is in the hands of the Anglo-Saxon. In this island, then, perhaps above all other localities in the world, provided such exist beyond the equator, is found an isogenetic zone for the English population.

But here follows a question of a more speculative, but scarcely less interesting description, in the southern hemisphere, though there are certain outward resemblances of climate, at least among its general elements, to the countries of the northern; though the atmospheric, the electrical, and the solar influences are the same apparently, and subject to the same laws of action in both, - it is a curious fact, that isogenetic influences, if such exist in both hemispheres, should have given rise to a flora and fauna so opposite. The islands of New Zealand have been not ill explored, yet the number of plants discovered, including marine, scarcely exceeds six hundred species - a scantiness which corresponds with that of the animal kingdom, of which, however, the deficiency is far more striking. The greater number of plants, too, both species and genera, are peculiar to the country; and, although lists of marine mammals, birds, reptiles, insects, fishes, shells recent and fossil, and annulose animals, have been furnished, as yet no terrestrial mammal, except bats, has been found in these islands.

The question, then, which arises, is this: Are the flora and fauna of New Zealand-so different to those of its antipodes- to be viewed as the development of a southern region, which is co-ordinate with an opposite state of the earth's magnetism to that of the northern? and if so, will its effects, so far as they affect organization, prove congenial to the system of living beings deriving their origin within the polar influence of a northern hemisphere? Should this inquiry, aided by science and experience, receive a favourable solution, there is no reason left to doubt the isogenetic character of the middle and south island of New Zealand, in reference to our zone, or that they will prove the most suitable home for the Anglo-Saxon that has yet been colonized by his race.

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