

Airs, Waters, Places

Hippocrates

I. WHOEVER wishes to pursue properly the science of medicine must proceed thus. First he ought to consider what effects each season of the year can produce; for the seasons are not at all alike, but differ widely both in themselves and at their changes. The next point is the hot winds and the cold, especially those that are universal, but also those that are peculiar to each particular region. He must also consider the properties of the waters; for as these differ in taste and in weight, so the property of each is far different from that of any other. Therefore, on arrival at a town with which he is unfamiliar, a physician should examine its position with respect to the winds and to the risings of the sun. For a northern, a southern, an eastern, and a western aspect has each its own individual property. He must consider with the greatest care both these things and how the natives are off for water, whether they use marshy, soft waters, or such as are hard and come from rocky heights, or brackish and harsh. The soil too, whether bare and dry or wooded and watered, hollow and hot or high and cold. The mode of life also of the inhabitants that is pleasing to them, whether they are heavy drinkers, taking lunch,¹ and inactive, or athletic, industrious, eating much and drinking little.

[...]

[Books II–XI are not reprinted here]

XII. So much for the changes of the seasons. Now I intend to compare Asia² and Europe, and to show how they differ in every respect, and how the nations of the one differ entirely in physique from those of the other. It would take too long to describe them all, so I will set forth my views about the most important and the greatest differences. I hold that Asia differs very widely from Europe in the nature of all its inhabitants and of all its vegetation. For everything in Asia grows to far greater beauty and size; the one region is less wild than the other, the character of the inhabitants is milder and more gentle. The cause of this is the temperate climate, because it lies towards the east midway between the risings³ of the sun, and farther away than is Europe from the cold. Growth and freedom from wildness are most fostered when nothing is forcibly predominant, but equality in every respect prevails. Asia, however, is not everywhere uniform; the region, however, situated midway between the heat and the cold is very fruitful, very wooded and very mild; it has splendid water, whether from rain or from springs. While it is not burnt up with the heat nor dried up by drought and want of water, it is not oppressed with cold, nor yet damp and wet with excessive rains and snow. Here the harvests are likely to be plentiful, both those from seed and those which the

earth bestows of her own accord, the fruit of which men use, turning wild to cultivated and transplanting them to a suitable soil. The cattle too reared there are likely to flourish, and especially to bring forth the sturdiest young and rear them to be very fine creatures.⁴ The men will be well nourished, of very fine physique and very tall, differing from one another but little either in physique or stature. This region, both in character and in the mildness of its seasons, might fairly be said to bear a close resemblance to spring. Courage, endurance, industry and high spirit could not arise in such conditions either among the natives or among immigrants,⁵ but pleasure must be supreme . . .⁶ wherefore in the beasts they are of many shapes.

XIII. Such in my opinion is the condition of the Egyptians and Libyans. As to the dwellers on the right of the summer risings of the sun up to Lake Maeotis, which is the boundary between Europe and Asia, their condition is as follows. These nations are less homogeneous than those I have described, because of the changes of the seasons and the character of the region. The land is affected by them exactly as human beings in general are affected. For where the seasons experience the most violent and the most frequent changes,⁷ the land too is very wild and very uneven; you will find there many wooded mountains, plains and meadows. But where the seasons do not alter much, the land is very even. So it is too with the inhabitants, if you will examine the matter. Some physiques resemble wooded, well-watered mountains, others light, dry land, others marshy meadows, others a plain of bare, parched earth. For the seasons which modify a physical frame differ; if the differences be great, the more too are the differences in the shapes.

XIV. The races that differ but little from one another I will omit, and describe the condition only of those which differ greatly, whether it be through nature or through custom. I will begin with the Longheads.⁸ There is no other race at all with heads like theirs. Originally custom was chiefly responsible for the length of the head, but now custom is reinforced by nature. Those that have the longest heads they consider the noblest, and their custom is as follows.

As soon as a child is born they remodel its head with their hands, while it is still soft and the body tender, and force it to increase in length by applying bandages and suitable appliances, which spoil the roundness of the head and increase its length. Custom originally so acted that through force such a nature came into being; but as time went on the process became natural, so that custom no longer exercised compulsion. For the seed comes from all parts of the body, healthy seed from healthy parts, diseased seed from diseased parts. If, therefore, bald parents have for the most part bald children, grey-eyed parents grey-eyed children, squinting parents squinting children, and so on with other physical peculiarities, what prevents a long-headed parent having a long-headed child?⁹ At the present time long-headedness is less common than it was, for owing to intercourse with other men the custom is less prevalent.

XV. These are my opinions about the Longheads. Now let me turn to the dwellers on the Phasis. Their land is marshy, hot, wet, and wooded; copious violent rains fall there during every season. The inhabitants live in the marshes, and their dwellings are of wood and reeds, built in the water. They make little use of walking in the city and the harbour, but sail up and down in dug-outs made from a single log, for canals are numerous. The waters which they drink are hot and stagnant, putrefied by the sun and swollen by the rains. The Phasis itself is the most stagnant and most sluggish of all rivers. The fruits that grow in this country are all stunted, flabby and imperfect, owing to the excess of water, and for this reason they do not ripen. Much fog from the waters envelops the land. For these causes, therefore, the physique of the Phasians is different from that of other folk. They are tall in stature, and of a gross habit of body, while neither joint nor vein is visible. Their complexion is yellowish, as though they suffered from jaundice. Of all men they have the deepest voice, because the air they breathe is not clear, but moist and turbid. They are by nature disinclined for physical fatigue. There are but slight changes of the seasons, either in respect of heat or of cold. The winds are mostly moist, except one breeze peculiar to the country, called *cenchron*, which

sometimes blows strong, violent and hot. The north wind rarely blows, and when it does it is weak and gentle.

XVI. So much for the difference, in nature and in shape, between the inhabitants of Asia and the inhabitants of Europe. With regard to the lack of spirit and of courage among the inhabitants, the chief reason why Asiatics are less warlike and more gentle in character than Europeans is the uniformity of the seasons, which show no violent changes either towards heat or towards cold, but are equable. For there occur no mental shocks nor violent physical change, which are more likely to steel the temper and impart to it a fierce passion than is a monotonous sameness. For it is changes of all things that rouse the temper of man and prevent its stagnation. For these reasons, I think, Asiatics are feeble. Their institutions are a contributory cause, the greater part of Asia being governed by kings. Now where men are not their own, masters and independent, but are ruled by despots, they are not keen on military efficiency but on not appearing warlike. For the risks they run are not similar. Subjects are likely to be forced to undergo military service, fatigue and death, in order to benefit their masters, and to be parted from their wives, their children and their friends. All their worthy, brave deeds merely serve to aggrandize and raise up their lords, while the harvest they themselves reap is danger and death. Moreover, the land of men like these must be desert, owing to their enemies and to their laziness,¹⁰ so that even if a naturally brave and spirited man is born his temper is changed by their institutions. Whereof I can give a clear proof. All the inhabitants of Asia, whether Greek or non-Greek, who are not ruled by despots, but are independent, toiling for their own advantage, are the most warlike of all men. For it is for their own sakes that they run their risks, and in their own persons do they receive the prizes of their valour as likewise the penalty of their cowardice. You will find that Asiatics also differ from one another, some being superior, others inferior. The reason for this, as I have said above, is the changes of the seasons.

XVII. Such is the condition of the inhabitants of Asia. And in Europe is a Scythian race,

dwelling round Lake Maeotis, which differs from the other races. Their name is Sauromatae. Their women, so long as they are virgins, ride, shoot, throw the javelin while mounted, and fight with their enemies. They do not lay aside their virginity until they have killed three of their enemies, and they do not marry before they have performed the traditional sacred rites. A woman who takes to herself a husband no longer rides, unless she is compelled to do so by a general expedition. They have no right breast; for while they are yet babies their mothers make red-hot a bronze instrument constructed for this very purpose and apply it to the right breast and cauterise it, so that its growth is arrested, and all its strength and bulk are diverted to the right shoulder and right arm.

XVIII. As to the physique of the other Scythians, in that they are like one another and not at all like others, the same remark applies to them as to the Egyptians, only the latter are distressed by the heat, the former by the cold.¹¹ What is called the Scythian desert is level grassland, without trees,¹² and fairly well-watered. For there are large rivers which drain the water from the plains. There too live the Scythians who are called Nomads because they have no houses but live in wagons. The smallest have four wheels, others six wheels. They are covered over with felt and are constructed, like houses, sometimes in two compartments and sometimes in three, which are proof against rain, snow and wind. The wagons are drawn by two or by three yoke of hornless oxen. They have no horns because of the cold. Now in these wagons live the women, while the men ride alone on horseback, followed by the sheep they have, their cattle and their horses. They remain in the same place just as long as there is sufficient fodder for their animals; when it gives out they migrate. They themselves eat boiled meats and drink mares' milk. They have a sweetmeat called *hippace*, which is a cheese from the milk of mares (*hippoi*).

XIX. So much for their mode of living and their customs. As to their seasons and their physique, the Scythians are very different from all other men, and, like the Egyptians, are homogeneous; they are the reverse of prolific, and Scythia breeds the smallest and the fewest wild animals. For it lies right close to the north

and the Rhipaeen mountains, from which blows the north wind. The sun comes nearest to them only at the end of its course, when it reaches the summer solstice, and then it warms them but slightly and for a short time. The winds blowing from hot regions do not reach them, save rarely, and with little force; but from the north there are constantly blowing winds that are chilled by snow, ice, and many waters¹³ which, never leaving the mountains, render them uninhabitable. A thick fog envelops by day the plains upon which they live, so that winter is perennial, while summer, which is but feeble, lasts only a few days. For the plains are high and bare, and are not encircled with mountains, though they slope from the north. The wild animals too that are found there are not large, but such as can find shelter under ground. They are stunted owing to the severe climate and the bareness of the land, where there is neither warmth nor shelter. And the changes of the seasons are neither great nor violent, the seasons being uniform and altering but little. Wherefore the men also are like one another in physique, since summer and winter they always use similar food and the same clothing, breathing a moist, thick atmosphere, drinking water from ice and snow, and abstaining from fatigue. For neither bodily nor mental endurance is possible where the changes are not violent. For these causes their physiques are gross, fleshy, showing no joints, moist and flabby, and the lower bowels are as moist as bowels can be. For the belly cannot possibly dry up in a land like this, with such a nature and such a climate, but because of their fat and the smoothness of their flesh their physiques are similar, men's to men's and women's to women's. For as the seasons are alike there takes place no corruption or deterioration in the coagulation of the seed,¹⁴ except through the blow of some violent cause or of some disease.

XX. I will give clear testimony to their moistness. The majority of the Scythians, all that are Nomads, you will find have their shoulders cauterized, as well as their arms, wrists, breast, hips and loins, simply because of the moistness and softness of their constitution. For owing to their moistness and flabbiness they have not the strength either to draw a bow or to throw a javelin from the shoulder.

But when they have been cauterized the excess of moisture dries up from their joints, and their bodies become more braced, more nourished and better articulated. Their bodies grow relaxed and squat, firstly because, unlike the Egyptians, they do not use swaddling clothes, of which they have not the habit, for the sake of their riding, that they may sit a horse well; secondly, through their sedentary lives. For the boys, until they can ride, sit the greater part of the time in the wagon, and because of the migrations and wanderings rarely walk on foot; while the girls are wonderfully flabby and torpid in physique. The Scythians are a ruddy race because of the cold, not through any fierceness in the sun's heat. It is the cold that burns their white skin and turns it ruddy.

XXI. A constitution of this kind prevents fertility. The men have no great desire for intercourse because of the moistness of their constitution and the softness and chill of their abdomen, which are the greatest checks on venery. Moreover, the constant jolting on their horses unfits them for intercourse. Such are the causes of barrenness in the men; in the women they are the fatness and moistness of their flesh, which are such that the womb cannot absorb the seed. For neither is their monthly purging as it should be, but scanty and late, while the mouth of the womb is closed by fat and does not admit the seed. They are personally fat and lazy, and their abdomen is cold and soft. These are the causes which make the Scythian race infertile. A clear proof is afforded by their slave-girls. These, because of their activity and leanness of body, no sooner go to a man than they are with child.

XXII. Moreover, the great majority among the Scythians become impotent, do women's work, live like women and converse accordingly. Such men they call Anaries. Now the natives put the blame on to Heaven, and respect and worship these creatures, each fearing for himself. I too think that these diseases are divine, and so are all others, no one being more divine or more human than any other; all are alike, and all divine. Each of them has a nature of its own, and none arises without its natural cause. How, in my opinion, this disease arises I will explain. The habit of riding causes swellings at the joints, because they are always

astride their horses; in severe cases follow lameness and sores on the hips. They cure themselves in the following way. At the beginning of the disease they cut the vein behind each ear. When the blood has ceased to flow faintness comes over them and they sleep. Afterwards they get up, some cured and some not. Now, in my opinion, by this treatment the seed is destroyed. For by the side of the ear are veins, to cut which causes impotence, and I believe that these are the veins which they cut. After this treatment, when the Scythians approach a woman but cannot have intercourse, at first they take no notice and think no more about it. But when two, three or even more attempts are attended with no better success, thinking that they have sinned against Heaven they attribute thereto the cause, and put on women's clothes, holding that they have lost their manhood. So they play the woman, and with the women do the same work as women do.

This affliction affects the rich Scythians because of their riding, not the lower classes but the upper, who possess the most strength; the poor, who do not ride, suffer less. But, if we suppose this disease to be more divine than any other, it ought to have attacked, not the highest and richest classes only of the Scythians, but all classes equally—or rather the poor especially, if indeed the gods are pleased to receive from men respect and worship, and repay these with favours. For naturally the rich, having great wealth, make many sacrifices to the gods, and offer many votive offerings, and honour them, all of which things the poor, owing to their poverty, are less able to do; besides, they blame the gods for not giving them wealth, so that the penalties for such sins are likely to be paid by the poor rather than by the rich. But the truth is, as I said above, these affections are neither more nor less divine than any others, and all and each are natural. Such a disease arises among the Scythians for such a reason as I have stated, and other men too are equally liable to it, for wherever men ride very much and very frequently, there the majority are attacked by swellings at the joints, sciatica and gout, and are sexually very weak. These complaints come upon the Scythians, and they are the most impotent of men, for the reasons I have given, and also because they always

wear trousers and spend most of their time on their horses, so that they do not handle the parts, but owing to cold and fatigue forget about sexual passion, losing their virility before any impulse is felt.

XXIII. Such is the condition of the Scythians. The other people of Europe differ from one another both in stature and in shape, because of the changes of the seasons, which are violent and frequent, while there are severe heat waves, severe winters, copious rains and then long droughts, and winds, causing many changes of various kinds. Wherefore it is natural to realize that generation too varies in the coagulation of the seed,¹⁵ and is not the same for the same seed in summer as in winter nor in rain as in drought. It is for this reason, I think, that the physique of Europeans varies more than that of Asiatics, and that their stature differs very widely in each city. For there arise more corruptions in the coagulation of the seed, when the changes of the seasons are frequent than when they are similar or alike. The same reasoning applies also to character. In such a climate arise wildness, unsociability and spirit. For the frequent shocks to the mind impart wildness, destroying tameness and gentleness. For this reason, I think, Europeans are also more courageous than Asiatics. For uniformity engenders slackness, while variation fosters endurance in both body and soul; rest and slackness are food for cowardice, endurance and exertion for bravery. Wherefore Europeans are more warlike, and also because of their institutions, not being under kings as are Asiatics. For, as I said above, where there are kings, there must be the greatest cowards. For men's souls are enslaved, and refuse to run risks readily and recklessly to increase the power of somebody else. But independent people, taking risks on their own behalf and not on behalf of others, are willing and eager to go into danger, for they themselves enjoy the prize of victory. So institutions contribute a great deal to the formation of courageousness.

XXIV. Such, in outline and in general, is the character of Europe and of Asia. In Europe too there are tribes differing one from another in stature, in shape and in courage. The differences are due to the same causes as I mentioned above, which I will now describe more clearly. Inhabitants of a region which is mountainous,

rugged, high, and watered, where the changes of the seasons exhibit sharp contrasts, are likely to be of big physique, with a nature well adapted for endurance and courage, and such possess not a little wildness and ferocity. The inhabitants of hollow regions, that are meadowy, stifling, with more hot than cool winds, and where the water used is hot, will be neither tall nor well-made, but inclined to be broad, fleshy, and dark-haired; they themselves are dark rather than fair, less subject to phlegm than to bile. Similar bravery and endurance are not by nature part of their character, but the imposition of law can produce them artificially. Should there be rivers in the land, which drain off from the ground the stagnant water and the rain water, these¹⁶ will be healthy and bright. But if there be no rivers, and the water that the people drink be marshy, stagnant, and fenny, the physique of the people must show protruding bellies and enlarged spleens. Such as dwell in a high land that is level, windy, and watered, will be tall in physique and similar to one another, but rather unmanly and tame in character. As to those that dwell on thin, dry, and bare soil, and where the changes of the seasons exhibit sharp contrasts, it is likely that in such country the people will be hard in physique and well-braced, fair rather than dark, stubborn and independent in character and in temper. For where the changes of the seasons are most frequent and most sharply contrasted, there you will find the greatest diversity in physique, in character, and in constitution.

These are the most important factors that create differences in men's constitutions; next come the land in which a man is reared, and the water. For in general you will find assimilated to the nature of the land both the physique and the characteristics of the inhabitants. For where the land is rich, soft, and well-watered, and the water is very near the surface, so as to be hot in summer and cold in winter, and if the situation be favourable as regards the seasons, there the inhabitants are fleshy, ill-articulated, moist, lazy, and generally cowardly in character. Slackness and sleepiness can be observed in them, and as far as the arts are concerned they are thick-witted, and neither subtle nor sharp. But where the land is bare, waterless, rough, oppressed by winter's storms and burnt by the

sun, there you will see men who are hard, lean, well-articulated, well-braced, and hairy; such natures will be found energetic, vigilant, stubborn and independent in character and in temper, wild rather than tame, of more than average sharpness and intelligence in the arts, and in war of more than average courage. The things also that grow in the earth all assimilate themselves to the earth. Such are the most sharply contrasted natures and physiques. Take these observations as a standard when drawing all other conclusions, and you will make no mistake.

NOTES [FROM TRANSLATOR W.H.S. JONES]

- 1 That is, taking more than one full meal every day.
- 2 That is, Asia Minor.
- 3 That is, the winter rising and the summer rising.
- 4 Or, "they are very prolific and the best of mothers."
- 5 The writer is thinking of Asiatic natives and the Greek colonists on the coast of Asia Minor.
- 6 There is a gap in the [original] text here dealing with the Egyptians and Libyans.
- 7 Or, more idiomatically, "the variations of climate are most violent and most frequent."
- 8 Practically nothing more is told us about this race by our other authorities, Pliny, Harpocration and Suidas.
- 9 Modern biologists hold that acquired characteristics are not inherited.
- 10 Or, reading "the temper of men like these must be gentle, because they are unwarlike and inactive."
- 11 Both people are of peculiar physique, and the cause of the peculiarity is in the one case extreme heat, and in the other extreme cold.
- 12 Or, reading "a plateau."
- 13 Or, "heavy rains."
- 14 As a modern physiologist might put it, "abnormal variations in the formation of the embryo."
- 15 *I. e.* "in the formation of the foetus."
- 16 The people or the rivers? Probably the former, in which case "bright" will mean "of bright (clear) complexion."