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# DOVER

AS A HEALTH-RESORT AND PLACE OF  
RESIDENCE: ITS CLIMATE, ETC.

BY

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## P R E F A C E.

IN the following pages I have endeavoured to present to my readers a true, faithful, and accurate description of the climate of Dover, its peculiar properties and characteristic features, as indicated by the meteorological journals of many years.

To my medical brethren these Tables *in extenso* would have been full of interest, but the limits of a pamphlet made it impossible for me to give more than an abstract of them for a period of seven years.

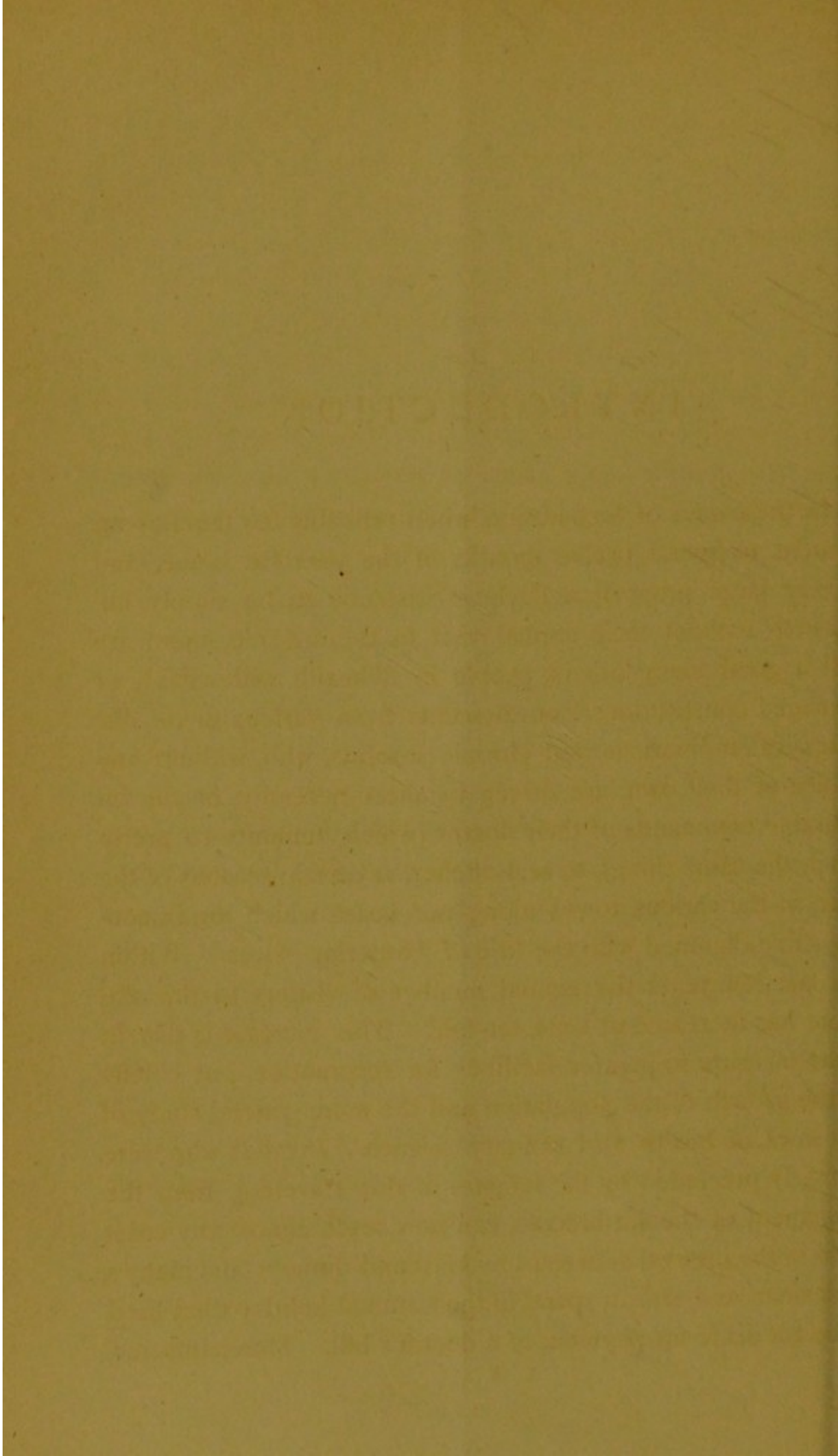
The Water-Supply, Drainage, and Mortality of the town have been fully noticed, and a few paragraphs devoted to the careful consideration of those diseases for which its climate would seem to be peculiarly adapted.

Whilst it is believed that nothing has been omitted which could be of service in enabling the profession to form a correct opinion upon the subject, it is hoped that the information contained in these pages will be sufficiently conclusive to convince most of my readers that Dover may justly claim a high position as a health-resort and place of residence.

CHARLES PARSONS.

18 LIVERPOOL STREET, DOVER,

May 1868.





## INTRODUCTION.

IN these days of locomotion, when probably few families are content to spend twelve months of the year 'at home,' and a very large proportion declare existence to be simply impossible without their annual visit to the sea-side, there are still a good many others, people in ill-health with weakly or damaged constitutions, convalescents from various acute diseases, valetudinarians and chronic invalids, who, without any choice of their own, are driven by sheer necessity, or the inexorable commands of their doctor (which amounts to pretty much the same thing), to seek shelter, at certain seasons of the year, in the various towns along our coast, which are in consequence dignified with the title of 'watering-places.' Within the last ten years the annual number of visitors to the sea-shore has increased at least ten-fold. This increase is due in some measure to greater facilities for locomotion, but chiefly to the growth of the population and the more general study of the laws of health and sanitary science. Invalids who were formerly precluded by the fatigues of slow travelling from the enjoyment of the sea-breezes, can now reach almost any coast town in the interval between breakfast and dinner; and many a tradesman and artisan spend in their annual holiday what used to be set aside for payment of a doctor's bill. Merchants and



men of business, too, have gradually become alive to the luxury of depositing their wives and families for a few months by the sea, and, availing themselves of a season-ticket, contrive to combine business with pleasure in the pursuit of health. It is in this way that the population of our watering-places has grown apace, in some instances outstripping the accommodation provided for it, and it not unfrequently happens that just at the very time when one wants to send a patient to a certain town it is already full to overflowing, and the houses and lodgings which used to suffice for invalids are wholly insufficient to accommodate the British matron with Paterfamilias and the 'boys home for the holidays' in addition! It is true that in most watering-places of acknowledged standing, enterprising builders and the proprietors of monster hotels endeavour to supply the wants of the public, and new houses spring up, and building operations are everywhere conspicuous. There are a good many old towns, however, along our coast, which have ample accommodation and everything conducive to health to recommend them, but having been eclipsed by the greater attractions of more fortunate or more fashionable rivals in days gone by, they have hitherto escaped the notice of the medical profession, and have in consequence fallen to the rear. It would be interesting to learn upon what data certain spots are recommended as places of residence. With the exception of those who have travelled greatly, few persons can have any ground of speaking with confidence of the climate or healthiness of any district. Our published observations are very limited, and it is much to be desired that the medical residents in the different watering-places would take up the subject of their 'Climatology' of their respective towns, and publish the results of their investigations for the guidance of the profession and the benefit of the public. Probably in this, as in most things



now-a-days, fashion leads the way. It would otherwise be difficult to explain upon what principle German and other distant watering-places, with no drainage to speak of, are selected in preference to those decidedly superior at home ! It is curious to observe, for example, how one year all 'lung cases' are sent to Madeira, another year to Algiers, another year to Nice and Mentone, etc. ; then sea-voyages and the distant Cape, or genial Australia, are in the ascendant, and the Continental towns at a discount. One man sets the example, and all the rest follow. It is much the same with our English watering-places ; many have nothing but a fashionable reputation to recommend them, and are crowded to overflowing, whilst others possessing greater claims in a sanitary point of view are not appreciated, and are well-nigh deserted. Many places have grown from mere hamlets to huge towns with two or three churches apiece, and the peaceful retreats of invalids seeking retirement and quiet have developed into flourishing, noisy, and bustling bathing-places. A good many old fishing towns, however, having attended to their sewage and set their houses in order, have gradually risen into public favour, and are now frequented regularly year by year by families who have learnt to regard health as the first thing to be sought after at the sea-side, and who don't despise the 'ancient fish-like smell' so common in places of this kind. In this way the increasing wants of an overflowing population have been in some measure supplied, and the general public have a larger number of towns at which to spend their summer holidays. But the invalid desires something more than this : he wants to learn which town of all others is best adapted to his peculiar case as a place of residence, and consults his medical adviser accordingly. Thanks to the increased attention which of late years has been given to the study of Climatology and the in-



fluence of climate in the treatment of disease, a good deal of important and valuable information on this subject has already accumulated, of which the community are reaping the benefit. I take it, therefore, for granted, that any additional contribution to the knowledge we already possess of the climatic peculiarities of our several watering-places, will be acceptable, not only to the medical profession, but also to the general reading public, inasmuch as sanitary science has become one of the most interesting and popular social questions of the day.

In the following remarks which I shall have to make upon Dover as a sanatorium, I shall endeavour to be concise, and confine attention to those topics simply which seem to fall more immediately within the scope of the subject.



## THE CLIMATE OF DOVER.

PERHAPS of all the agents which variously affect the human body, either in the development of disease or in the establishment of health, none exerts a greater influence than the atmosphere, surrounding as it does not only the whole exterior of the body, but also penetrating to the internal surface of the lungs. It will be obvious therefore that any alteration, either in the physical character or chemical composition of this agent, must affect the human body for good or evil, seeing that it pervades it so entirely. It is by contact of the air in its normal condition with the surface of the lungs that all those changes in the blood are brought about which are so essential to existence and the enjoyment of health. On the other hand, when the air is poisoned by the emanations from animal or vegetable matter in a state of decomposition, or from diseased bodies, or by noxious vapours, it becomes a ready channel of disease, attacking all within its reach, and sparing none. It is, however, the physical characters of the atmosphere that demand attention when considering the *climate* of a district. In short, the 'temperature, moisture, pressure, and electric condition of the air, variously modified and blended by situation, soil, and the physical conformation of the surrounding country, may be said to constitute *climate*.' It is of these that I shall have chiefly to speak in dealing with the climate of Dover, though not in the order in which they are here enumerated. And as the subject might be considered very imperfectly treated



were all mention of the water-supply, drainage, and mortality of the town omitted, I propose to devote a few pages to the consideration of these matters, in order that my readers may be enabled to judge for themselves of the claims of Dover to be considered a good sanatorium and a desirable place of residence.

### I. *Geological Character of the Soil.*

It is hardly necessary to insist upon the important influence which the geological character of the site of a town exerts directly upon its climate, and indirectly upon the healthiness and mortality of its inhabitants. Most people have some indefinite notion that a clayey soil is not conducive to health, nor a marshy district to longevity. The reason is obvious: rain cannot penetrate the clay; a large surface water accumulates, and by evaporation reduces the temperature of the air, imparting to it what is popularly called 'a cold, raw feeling.' In marshy ground we have in addition emanations from decaying vegetable matter with nearly constant fog. On the other hand, everybody is as strongly persuaded of the superior excellence of a gravelly soil, and land with this character always commands a good price for building purposes. The reason is equally clear: the loose nature of the soil permits the free percolation of the falling rain, and leaves little or none for evaporation from the surface,—consequently the coldness and fogginess are reduced to a minimum. Now, the town of Dover enjoys all the advantages of a gravelly soil, though its foundations are not upon the gravel. Considering that it stands, so to speak, in the middle of what geologists call the 'Chalk formation,' it may to a superficial observer naturally appear to be built upon the chalk, and I believe this erroneous impression very generally obtains. The truth however is that most of the existing town, or at any rate that part of it which is usually occupied by visitors and settlers, is built upon the beach, made up for the most part of shingle flints, sand, etc. It would be impossible



to conceive a more admirable filter, or a condition of things more favourable to the salubrity of the town. The rain never lies long upon the surface, but freely penetrates the soil, and even after a heavy shower the ground so quickly dries that walking exercise is seldom or never interfered with. To invalids and others in search of health, whose time by the sea-side should be chiefly spent out of doors, this is a most important consideration, and well deserving attention.

Another feature which is peculiar to light and porous soils of this nature is that they readily absorb heat during the day, and radiate it into the atmosphere during the night, thus modifying and tempering the heat of the sun by day, and raising the low temperature of the air by night; so that the extremes of heat and cold are both avoided.

To geologists, of course, the whole district is interesting in a scientific point of view. The long range of cliffs extending from Deal on the east to Folkestone on the west, presents a natural section of the 'Chalk formation,' in some places opposing an immediate barrier to the sea, in others interrupted by falls of huge portions of cliff which have gradually been overgrown with herbage, forming picturesque hillocks of pasturage for cattle. This is especially the case in the latter half of the distance between Dover and Folkestone, where the scenery forcibly reminds one of the 'Undercliff' of the Isle of Wight, and indeed, might be considered a miniature representation of it. This vegetation, however, does not interfere with geological study, although it somewhat obscures the stratification. The strata may be briefly stated to be numerous, regular, and perfectly defined; collectively about 820 feet thick, and lying in the following order (according to Phillips):—

I. The Chalk with numerous flints, about 350 feet thick, and may thus be divided—

1. With few organic remains,<sup>1</sup> lying upon
2. A bed consisting chiefly of organic remains, in which numerous flints of peculiar forms are interspersed;

<sup>1</sup> This forms the principal part of the Western Heights and Castle Cliff.



and a few beds of flint run along it. This bed<sup>1</sup> is termed the chalk with interspersed flints.

II. The Chalk with few flints. This stratum<sup>2</sup> is about 130 feet thick.

III. The Chalk without flints is 140 feet thick, and consists of—

1. A stratum 90 feet thick, containing numerous thin beds of organic remains.

2. A stratum 50 feet thick, with few organic remains.

IV. The Grey Chalk. This is estimated to be not less than 200 feet in thickness.

## *2. Aspect and Geographical Position.*

The importance of this subject in relation to health has long since been very generally recognised, and the superiority of a southern aspect is now universally admitted. It is manifest that this is the only position in which the full influence of the sun can be felt from morn till eve. Any deviation of frontage, either to the east or west, must necessarily curtail the enjoyment of the beams of the sun. Now Dover is very happily circumstanced as regards aspect—the long ranges of houses on the beach, from East Cliff on the one side to the Esplanade on the other, including Marine Parade and Waterloo Crescent, look nearly due south, or rather south by east. Some few houses at the western extremity following the curve of the bay have their frontage a little more easterly, and consequently lose the sun's rays earlier in the day than the others. The influence of light upon the growth and development of plants and animals is so evident that it is unnecessary to do more than allude to it here as being absolutely essential to a healthy and vigorous existence. The town lies in lat.

<sup>1</sup> Includes the upper portion of Shakspeare's Cliff, and the range west of it.

<sup>2</sup> The lower portion of Shakspeare's Cliff, and adjoining cliffs to the westward of it.



51° 8' N., and long. 1° 19' E., at the mouth of the river Dour, a small stream issuing from a valley which is overspread with the houses of a large proportion of the inhabitants. In this direction building operations are still rapidly extending.

### 3. *Altitude and Sheltered Position.*

It is pretty well understood that the temperature of a locality is regulated in a great degree by its elevation above the level of the sea—the greater the height the greater the cold, and *vice versâ*. It has been calculated that for every 300 feet of altitude the mean temperature is diminished one degree. The town of Dover is built so near to the level of the sea as to be only a few feet above high-water mark, and is therefore fully exposed to the benign influence of the breezes that sweep the surface of the straits. It is also flanked and fully protected in the rear by the rising heights of the chalk range. On the N.E. lie the South Foreland and the hill on which Dover Castle stands. The latter immediately overhangs the houses at East Cliff, and is at this point about 340 feet high, whilst near the Turnpike it is at least 50 feet higher, and reaches to 390 feet. This range of hills opposes an efficient barrier to the keen penetrating winds which blow from the N. and N.E. during the winter and early months of spring, whilst on the western flank the Western Heights and the Alkham range afford ample protection from the northern and north-westerly blasts. In fact, it is no uncommon sight during the prevalence of N. and N.E. winds to see the bay dotted with vessels of every kind, riding peacefully at anchor under the shelter of the South Foreland cliff, whilst the sea beyond is covered with white-crested waves. The walk beneath this cliff along the beach is so sheltered that even a piercing N.E. wind of considerable force is wholly unperceived by the loiterers on the shingle and rocks below; and should the day be bright and the sun shining the temperature is not surpassed even by the 'Undercliff' of the Isle of Wight. But



the town is entirely open towards the s.s.e. and s.w., and fully exposed to the gales which blow from these quarters. They, however, are warm winds coming directly over the sea, at once refreshing, invigorating, and conducive to health and enjoyment.

#### 4. *Temperature.*

This is by far the most important consideration in estimating the character of any climate, and naturally claims a large share of attention, inasmuch as the very closest relationship exists between the temperature of a district and the health of its inhabitants. Probably there is no influence so powerful as that of temperature in augmenting or diminishing both the sickness and mortality of the kingdom at large. To the most casual observer it must be evident that the death-lists in the various newspapers are much longer in winter than summer—a *low* temperature being invariably followed by a *high* death-rate, which reaches its maximum when the temperature has attained its *lowest* point. On the other hand, a *high* temperature develops sickness, which becomes more widely spread as the thermometer rises. Hence a very hot summer is always a very sickly one, and a very cold winter a very fatal one. At least this may be said to be the general rule now-a-days. Formerly it was otherwise, and the hottest summer was at once the most sickly and the most deadly. This however was before the medical profession had taken to sanitary reform, and our towns in all their filthiness only needed a high temperature to favour putrefaction and decay, and at once those diseases which are dependent on a polluted atmosphere rushed into existence, and spread sickness and death on the wretched population around.

One of the great triumphs of sanitary science is the reduction of the summer death-rate by the removal of the causes of atmospheric poisoning which contributed to keep it high. The result is that the mortality is now greatest in the



winter (when the temperature is lowest), and amongst the very young and the very old, whose feeble powers offer the least resistance to its injurious effects. The Registrar-General says, in his Report for 1864: 'The mortality is lowest in the summer quarter. This rule holds invariably in England in ordinary seasons, and only fails to assert itself when malignant cholera, favoured by the heat of summer, rages over the country.'

The temperature of a place is influenced by a variety of circumstances, some of which, as far as Dover is concerned, have been already alluded to. A few others may be appropriately considered here.

First and foremost in importance are *the rays of the sun*, the source of the intense heat of the tropics. And here it must be confessed that the Continental towns on the shores of the Mediterranean have in this respect the advantage of all English towns whatsoever, inasmuch as they are nearer the equator, and the temperature decreases as the latitude increases. But if the day temperature is higher than in England when the sun exerts his full influence, the nights are to one's senses much colder when his rays are withdrawn, and every change, such as is produced even by a passing cloud, is felt the more perceptibly. In short, these towns, being dependent almost entirely on this source of heat, are subject to more frequent vicissitudes and greater ranges of temperature than places exposed to the influence of the 'Gulf Stream' as well.

Secondly, the watering-places on the south coast of England are not so dependent, but enjoy the full benefit of the Gulf Stream, and its moderating influence upon their temperature. This wonderful stream, heated by the sun's rays in the Gulf of Mexico, conveys its stored-up caloric to our shores, and renders our winters mild and equable. Captain Maury of Washington, in his excellent treatise on the *Physical Geography of the Sea*, says:—'Every west wind that blows crosses the stream on its way to Europe, and carries with it a portion of this heat, which is about 9° above the ocean temperature due



to the latitude, to temper there the northern winds of winter. It is the influence of this stream upon climate which makes Erin the "emerald isle of the sea," and clothes the shores of Albion in evergreen robes, while in the same latitude on this side the coasts of Labrador are fast bound in fetters of ice.'

The modifying influence of the ocean upon climate is perhaps rendered more conspicuous by a consideration of the temperatures of Continental inland places removed from the sea-coast, and it will be found that the ranges of temperature are greater—the summer being hotter and the winter colder—though the parallels of latitude may be identical, or even less on the side of the Continental regions.

When residing in Vienna in the summer of 1863, the thermometer frequently stood at  $84^{\circ}$  out of doors after sunset at eight P.M. This was '*in der Stadt.*' And any one who reads the *Times* reports on Public Health will remember how very much lower the winter temperature of that place is as compared with that of London, for usually the temperature and mortality of the two cities are placed side by side.

But it may be asked, How and in what manner is the climate of Dover affected by its proximity to the sea? In the summer time the earth absorbs heat much more rapidly than the water, and the air in contact with its surface becomes rarefied and ascends. Immediately the colder air which lies upon the face of the water rushes in to supply its place, and reduces the temperature of the terrestrial atmosphere with the most refreshing breezes. Hence one instinctively prefers on a very sultry day to walk close to the water's edge, for here if anywhere a 'breath of fresh air' is to be found. It is in this way that the summer heat is moderated, for the waters of the ocean do not, as a rule, exceed  $60^{\circ}$  or  $65^{\circ}$  around our coasts, and are therefore far below the temperature which prevails on land at this season of the year. So also in winter, the temperature of the sea being never lower than  $40^{\circ}$ , the town is warmed by the latent heat of the Gulf Stream which laves the shore. And when aqueous vapours arise from its surface



and come in contact with the colder air of the coast, condensation ensues, clouds are formed, and the latent heat which is given out in the process elevates the surrounding temperature and reduces the severity of the winter cold, whilst the clouds that have arisen serve to retain the heat by hindering its radiation into space. According to Keith Johnston, 'it is calculated that the amount of heat discharged over the Atlantic from the waters of the Gulf Stream, in a wintry day, would be sufficient to raise the whole column of the atmosphere that rests upon France and the British Isles from the freezing point to summer heat.'

Thirdly, the cliffs which surround Dover in the rear are thought by some people to render the town unpleasantly hot. This is surely a mistake. Doubtless, the chalk strongly reflects both light and heat, but the greater the surface which is heated the greater the cool breeze which steams in from the sea to fill the vacuum occasioned by the rarefaction of the air by the heated cliffs. At East Cliff, where the houses are overhung by the rocks in the immediate background, the heat is not excessive in the summer, whilst in the winter the shelter afforded by the cliffs renders these houses most desirable residences for invalids with chest affections, for they are entirely protected from the N. and N.E. winds, and are only open to S.S.E. and S.W.

The following Tables embrace a period of seven years, and give an outline of the chief features in the climate of Dover from 1860-66 inclusive. In Table A the calculations are made for each month only, in Table B, for each year, with the addition of the extremes of heat and cold recorded during the same period.<sup>1</sup>

<sup>1</sup> These Tables are compiled from the Meteorological Journals of Mr. Poulter of this town, who has very kindly placed them at my service for this purpose. His observations extend over a good many years, and have been recorded from day to day with the most painstaking diligence and regularity; but they have been of necessity greatly curtailed here, in order to reduce the size of the publication.



TABLE A.

	JAN.	FEB.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1860. Mean Barom.,	29.384	30.144	29.996	30.106	30.08	29.96	30.15	29.91	30.076	30.177	30.02	29.65
" Temp.,	38.79	35.31	40.61	44.02	53.38	57.88	59.54	59.72	56.62	51.76	42.41	37.75
Average of Ozone,	.46	.82	.7	1.25	1.06	.86	.75	.67	.45	.11	.14	.009
1861. Mean Barom.,	30.288	30.02	29.94	30.288	30.216	30.09	29.96	30.18	30.028	30.137	29.89	30.28
" Temp.,	32.98	41.65	44.15	46.72	52.98	61.15	63.37	64.56	58.66	54.76	39.725	39.91
Average of Ozone,	.011	.06	1.46	1.03	1.048	1.53	.47	.43	.5	.4	.006	...
1862. Mean Barom.,	30.04	30.20	29.86	30.16	30.09	30.08	30.08	30.16	30.229	30.09	30.08	30.16
" Temp.,	35.37	39.41	43.06	48.316	55.99	57.9	60.36	60.3	58.22	52.04	40.71	42.35
Average of Ozone,	.01	.16	.02	.05	1.24	1.4	.38	.54	.6	.06	.16	.041
1863. Mean Barom.,	30.44	30.40	29.95	30.11	30.013	30.09	30.32	30.16	30.07	29.87	30.	30.28
" Temp.,	39.822	41.9	42.12	48.	52.55	58.006	60.20	62.11	53.93	53.7	44.47	40.8
Average of Ozone,	.74	.003	.06	.01	1.19	.02	2.2	1.09	1.4	1.3	1.07	.038
1864. Mean Barom.,	30.34	30.07	30.82	30.23	30.16	30.31	30.21	0.28	30.15	30.07	29.98	30.15
" Temp.,	33.9	34.3	40.46	46.3	52.61	57.3	57.27	57.91	56.3	49.38	40.36	36.04
Average of Ozone,	.93	.8	1.1	1.2	1.25	1.3	1.2	.96	1.7	.38	.46	.01
1865. Mean Barom.,	29.74	30.03	30.01	30.29	30.139	30.39	30.15	30.10	30.43	29.76	30.05	30.39
" Temp.,	33.87	34.42	37.008	50.98	55.63	58.83	64.24	61.06	63.72	54.34	47.26	43.98
Average of Ozone,	.059	.03	1.7	1.1	.089	.08	.009	.03	.05	.04	.083	.08
1866. Mean Barom.,	30.05	29.88	29.87	30.09	30.16	30.18	30.15	30.02	29.972	30.29	30.10	30.13
" Temp.,	44.201	42.74	41.76	49.64	51.37	61.73	62.03	60.07	58.14	54.19	44.99	44.28



TABLE B.

	1860.	1861.	1862.	1863.	1864.	1865.	1866.
Mean Daily Temp.,	48.19	50.1	49.5	49.6	47.16	47.97	51.43
,, Monthly do.,	47.727	50.50	49.39	49.424	46.68	50.44	50.891
Highest Temp.,	75.	76.	74.	76.	74.	80.	76.
Lowest do.,	10.	18.	20.	23.	11.	15.	28.5

### 5. Humidity of the Atmosphere.

Next to temperature, humidity may be justly regarded as the most important factor in the constitution of *climate*, though its influence is not so readily traced. In tropical regions, however, the unhealthiness of those districts where excessive heat prevails in combination with super-abundant moisture of the atmosphere is generally acknowledged, and the lethal character of the Sunderbunds of Bengal, the swamps and jungles of India, the coasts of Africa, and suchlike places, is sufficiently notorious. Even in temperate climates, on the Continent and in this country, the death-rate in low-lying marshy districts rises with the rising of the thermometer in summer heat. It would appear that neither an excess nor a deficiency of moisture in the air is conducive to health, but that a certain amount almost approaching the point of saturation is essential to personal comfort and well-being. In some places this degree of humidity is observed at one season of the year only, and they are consequently subjected to great ranges of temperature. In other countries again the saturation-point is almost constantly maintained by an abundant atmospheric moisture, and a temperature ranging within more circumscribed limits, and therefore more equable in character, is enjoyed. In this last category Great Britain and Ireland must be included, for the dull leaden skies of an English winter, which everybody dislikes so much, help to maintain a uniform temperature by opposing the radiation of heat from



the earth's surface into space. Similarly we are protected from the fierceness of the solar rays by this interposing veil of clouds.

Dr. Bennet, in his excellent treatise *Winter in the South of Europe*, speaking of the English climate, says: 'The atmosphere above the British Isles is always loaded with aqueous vapour, which gives to the sky its usual whitish colour. Hence the coolness of our summer as compared with that of the same Continental latitudes. The aqueous vapour of the atmosphere shields the earth from the action of the sun's rays during the day, and prevents radiation during night. In winter, when the sun is low on the horizon, and its rays are feeble, the cloud atmosphere, by preventing radiation, keeps in the heat previously acquired, and contributes, with the Gulf Stream, to render the British winter milder than that of the drier Continental regions in the same parallel of latitude.'

The chief source of the aqueous vapour of the atmosphere of this country is the sea by which we are surrounded, and the evaporation constantly going on from its surface. This again is favoured by the prevalence of warm and humid winds. In a paper by Mr. Glaisher, published in the Proceedings of the British Meteorological Society, the average number of days of each wind, as found from observations extending over a period from 1841 to 1860, referred to eight points of the compass, was as follows:—

From the South-west,	.	.	104 days.
„ North-east,	.	.	48 „
„ North,	.	.	41 „
„ West,	.	.	38 „
„ South,	.	.	34 „
„ North-West,	.	.	24 „
„ East,	.	.	22 „
„ South-east,	.	.	20 „
Calm,	.	.	34 „

The s.w. wind appears to be the most constant throughout



the year, bringing warmth and moisture to us for eight months. But there is great variation from year to year in the persistence of all winds, and the only one whose advent can be predicted with anything approaching regularity is the cold and dry N.E. wind of spring, which sets in about March and April. Neither of these two winds will be found to prevail for the same number of days in consecutive years, and the character of the climate of any given year is very much dependent upon the predominance of the one over the other.<sup>1</sup> Another equally prolific source is the rain that falls, and in estimating its influence due consideration must be given to the number of rainy days and the amount of rainfall. In districts possessing a loose soil the rain rapidly disappears, and leaves but a small residuum for evaporation.

Table C represents the amount of rainfall and the number of rainy days at Dover during a period of seven years from 1860-66. Table D has been added for the sake of comparison.

TABLE C.

	1860.	1861.	1862.	1863.	1864.	1865.	1866.
Quantity of Rain, .	36.25 in.	28.41 in.	25.93 in.	26.31 in.	23.04 in.	38.03 in.	36.95 in.
Number of Rainy Days,	120	100	110	85	75	109	106

<sup>1</sup> Those who wish to pursue the subject further will find an interesting and valuable paper, 'On the Temperature of the Sea, and its Influence on the Climate and Agriculture of the British Isles,' by Nicholas Whitley, F.M.S., in the Journal of the Royal Agricultural Society of England, vol. iv. Part 1, No. vii., 1868.



TABLE D.

NAMES OF STATIONS.	1860.		1861.		1862.		1863.		1864.		1865.		1866.	
	No. of Rainy Days.	Amount of Rain- fall. inches.	No. of Rainy Days.	Amount of Rain- fall. inches.	No. of Rainy Days.	Amount of Rain- fall. inches.	No. of Rainy Days.	Amount of Rain- fall. inches.	No. of Rainy Days.	Amount of Rain- fall. inches.	No. of Rainy Days.	Amount of Rain- fall. inches.	No. of Rainy Days.	Amount of Rain- fall. inches.
Ventnor, . . .	183	36.2	153	27.4	153	30.0	144	27.7	140	22.0	156	32.7	No returns.	No returns.
Bournemouth,	No returns.		No returns.		162	28.5	108	30.3	102	21.7	116	33.1	147	31.3
Worthing, . .	173	34.5	No returns.		195	32.9	169	28.7	142	24.3	161	34.7	172	31.0
Brighton, . .	No returns.		+ 87	23.3	† 112	27.5	118	27.1	113	23.2	152	36.4	No returns.	No returns.
Dover, . . .	120	36.25	100	28.41	110	25.93	85	26.31	75	23.04	109	38.03	106	36.95

+ June omitted.

† July omitted.



## 6. Water Supply.

It is an admitted axiom of sanitary science in these times, that perfect health cannot consist with impure and polluted water, nor with a scanty and deficient supply. A town may be absolutely faultless in every other respect, its site and position unsurpassed, its sanitary arrangements admirable, but if an abundant supply of good water be wanting, a high death-rate will soon proclaim to the world that after all the place is nothing better than a 'whited sepulchre.'

'The water-supply of Dover is now mainly furnished by the works of the Local Board constructed in 1853-56. The water is derived from two communicating wells sunk into the chalk, 226 feet deep, with an adit of 250 yards, driven horizontally, to intercept springs in the chalk. From these wells 50,000 gallons an hour can be raised, which would amount in practice to 8,000,000 gallons a week. 7,500,000 is, however, the average amount really raised, giving to the houses that are supplied the copious allowance of 48 gallons per head per day. The delivery of the water is from two service reservoirs, the higher at 220 feet above low-water mark, holding half a million gallons; the other at 145 feet above low-water, and holding 1,000,000 gallons, for the supply of lower levels. The water is delivered on the constant-pressure system during 10½ hours of each day, and it is intended to make the supply constant during the night.'—*Privy Council Report on Public Health for 1866*—Dr. Buchanan.

Some houses of the town are supplied from the reservoirs belonging to the Gas Company, with a constant flow of water at all times.

The following is the report of Dr. Letheby upon a specimen of the Dover water submitted to him for analysis by the Local Board, on September 19, 1866:—

'It was remarkably bright and clear, and was free from all trace of organic matter.



‘The composition of the water per imperial gallon was as follows, and for comparison there is added the composition of water supplied to London :—

CONSTITUENTS.	Dover Water.	Kent Water.	New River.	Thames River.
	grs.	grs.	grs.	grs.
Carbonate of Lime and Magnesia,	13.75	14.10	12.08	11.10
Sulphate of Lime, . . . .	2.42	5.74	1.82	4.78
Alkaline Chloride, . . . .	0.92	2.27	1.54	1.88
Alkaline Nitrate, . . . .	4.25	1.93	1.18	1.96
Silica and Alumina, . . . .	0.67	0.97	0.46	0.72
Organic Matters, . . . .	no trace.	0.26	0.56	0.80
Total per gallon,	22.01	25.27	17.54	21.24
Hardness before boiling, . .	17 deg.	19 deg.	15 deg.	15 deg.
Do. after boiling, . . . .	6½ „	7 „	5 „	6 „

‘These results show that the water is of excellent quality, and that from the circumstance of its being absolutely free from organic matter it is especially well suited for domestic use and for a town supply.

‘It was further ascertained that the water was entirely without action on lead, and therefore might be safely stored in lead cisterns, or distributed by lead pipes.

‘My conclusion is, that I have rarely examined a water so free from organic matter, or better suited for domestic purposes.’

It is clear then that Dover enjoys the inestimable privilege of an abundant supply of water of such acknowledged excellence and purity as is seldom attained.

### 7. *Drainage.*

Before the year 1853 there was no regular system of drainage for the town of Dover ; cesspools abounded, but few drains or sewers existed, and these not always of the best construction, and wholly inadequate to the wants of the population. At this



time the sanitary condition of our towns attracted public attention, local boards sprang into existence, who were empowered to carry out such improvements as the circumstances of each case demanded, and to furnish the inhabitants with a sufficient supply of water, and an effective system of drainage, which the medical profession had declared to be indispensably necessary for the health and well-being of the community at large. It was at this period that a local board was constituted for Dover, and almost simultaneously the construction of the present water-works was taken in hand, and a contract entered into for laying down a perfect system of main-drainage for the town. The three years 1854-6 were thus consumed, and the year 1856 saw the completion of these early labours of the Board. The works were unavoidably of an expensive character, and the main-drainage alone is estimated to have cost the town not less than £70,000.

The new sewerage is thus described in the Report to the Privy Council for 1866, before quoted :—

‘ The plan of sewerage has been to retain the old sewers to carry off the storm-water, improving and extending them where necessary, but to divert from them all soil-drainage into a new system of sewers that are chiefly pipes. This pipe system discharges into the sea at low-water by gravitation.

‘ Arrangements are also made for pumping it during high-water and the spring tides.

‘ The great majority of the sewers are 9 to 18 inch pipes, houses being connected by 6-inch pipes, and the block system being largely used ; surface-water from roofs and yards enters these pipes, as well as closet and house refuse. The main valley sewer is brick,  $4\frac{1}{2} \times 3$  feet, and is laid at a varying gradient from 1 in 280 to 1 in 640, and at a depth of 14 feet below the surface. The pipes are at various gradients, and some of them are only about 6 feet below the surface, just deep enough to drain basements. Water-spouts are left untrapped when in safe situations, to serve as ventilators. At the summit of every sewer a flushing well is constructed that



can be filled from the water mains ;—this arrangement is frequently used, and acts efficiently, the sewers being really kept in practice free from deposit.'

In the year 1867 it came to the knowledge of the Local Board that the water of the river Dour was polluted by drainage from the houses on its banks, and an order was immediately issued forbidding the further contamination of the stream in this way, and compelling the respective owners of the property to drain into the main sewer. At the same time instructions were given to the Town Surveyor to see that all the new houses recently erected, and those in course of construction, connected themselves with the main-drainage as soon as possible. Notices were also served on those proprietors who had hitherto neglected this duty, and under the direction of the Surveyor the works have been pushed on as vigorously as circumstances permitted, and very soon not a house in the town will be left unconnected with the main sewer.

The thanks of the inhabitants are due to the Local Board for the energy and activity displayed in this matter. It is only by the early adoption of such precautionary measures that the outbreak of those epidemics which have decimated other towns can be avoided, and Dover be enabled to show such a bill of health as will convince even the most sceptical of the superior excellence of its climate and its general salubrity.

### *8. Mortality.*

It may be stated generally that the country south of the Thames is the healthiest, and that fewer deaths occur in those counties included in the south-eastern division of the kingdom, viz., Kent, Surrey, Sussex, Hampshire, and Berkshire, than in any other part of England. In the mining and manufacturing districts, of course, the mortality is greatest ; and it is curious to observe how frequently the death-rate augments with the increased prosperity of a community. A large number of men,



women, and children, all more or less earnestly engaged in the pursuit of wealth, pay little heed to sanitary matters, till, poisoned by their own exhalations, impure air, and bad water, they are swept from the earth by the epidemics which their own negligence generated. So also the same causes tend to destroy the natural advantages of many of our watering-places; the population increases, the people flourish and build houses, but neglect their sewage. The local authorities are slow to incur the costly expense of drainage; they are doubtful whether there is really so much need of it after all; and thus the matter is postponed from time to time, and nothing is done. They do not see that the surest way to gain public favour, and retain it afterwards, is to make sanitary measures their first concern, and establish a reputation for healthiness which nothing can assail. Even now our English watering-places contrast very favourably with those abroad, where attention is rarely or never given to such matters; and there is every reason to believe that eventually England will become the sanatorium of most foreigners in search of health. Already our neighbours on the opposite coast are beginning to disregard the interval between us, and spend their autumn holidays on our shores. This may be attributed probably to our more immediate proximity, but it cannot be denied that a 'clean bill of health' is a powerful recommendation. Dover has always enjoyed the privilege of a low death-rate, but since the introduction of a proper system of drainage, and an adequate water supply, the mortality has been reduced still lower. The following Table E, extracted from the Report of the Medical Officer of the Privy Council for 1866, indicates in round numbers the death-rate before and after the completion of the sanitary improvements, and clearly shows in what diseases the diminution in the number of deaths has occurred.

Cheltenham and Worthing, the only other watering-places contained in this table, have been added here for the sake of comparison:—



T A B L E F.

Popula- tion in 1861.	Towns in order of their Popula- tion.	Periods for which the Death-rates are compared		Death-rates per annum, Total and Particular, per 10,000 of general Population for each of the Compared Periods.											
		Before the Works.	After the Works.	General Death-rates.	General Death-rates, after excluding Small-pox and Infantine Epidemics.		Typhoid Fever.	Diarrhoea, excluding Cholera so-called.	Cholera in each of the three Epidemics.		Phthisis.	Phthisis and Pulmonary Diseases of Women aged 15-55.		Death-rates of Infants under One year of Age.	
					Before the Works.	After the Works.			Before the Works.	After the Works.		Before the Works.	After the Works.	Before the Works.	After the Works.
39,693	Chel- ten- ham,	1845 to 1857	1860 to 1865	194 : 185	182 : 172	8 : 4 $\frac{2}{3}$	8 $\frac{1}{2}$ : 7	... : ... : ...	28 $\frac{2}{3}$ : 21 $\frac{1}{4}$	15 : 11 $\frac{2}{3}$	40 $\frac{1}{2}$ : 37				
23,108	Dover	1843 to 1853	1857 to 1865	225 $\frac{1}{2}$ : 209	203 : 187	14 : 9	9 $\frac{1}{2}$ : 7	40 : 10 : 4 $\frac{2}{3}$	26 $\frac{1}{2}$ : 21 $\frac{1}{4}$	13 $\frac{1}{2}$ : 11 $\frac{1}{4}$	47 $\frac{2}{3}$ : 46 $\frac{1}{3}$				
5,805	Wor- thing,	1843 to 1852	1857 to 1865	155 : 153	139 : 136 $\frac{1}{2}$	7 $\frac{1}{2}$ : 9 $\frac{1}{4}$	4 $\frac{2}{3}$ : 5 $\frac{1}{2}$	... : ... : ...	30 $\frac{1}{2}$ : 19 $\frac{1}{2}$	14 $\frac{3}{4}$ : 9 $\frac{1}{4}$	24 $\frac{1}{2}$ : 22 $\frac{1}{3}$				



T A B L E F.

Town, and Population in 1861.		Nature of Change in Rate of Mortality (per 10,000) before and after the chief operations in previous Table.									
		Total Deaths.	All Causes under One Year.	Measles.	Scarlatina.	Pertussis.	Fevers (excluding Typhus).	Diarrhœa.	Phthisis.		Lung Diseases.
									Total.	Females, 15-55.	
Dover,	23,108	Reduced from 225½ to 209.	-3 p. c.	+50 p. c.	-64 p. c.	-30 p. c.	-36 p. c.	-26 p. c.	-20 p. c.	-18 p. c.	+14 p. c. (aged.)

A double line under certain figures denotes that the actual previous rate of prevalence of a disease was high ; p. c. means per cent. ; + increase ; and - reduction of the previous rate of mortality.



Table F exhibits at a glance the percentage of the improvement in the death-rate of the town since the completion of the sanitary works. The annual rate of mortality in Dover to every 1000 living is estimated at 20. The Local Board is fully alive to the importance of maintaining the town in a healthful condition, and no expense is spared to complete the perfection of our sanitary arrangements. Within the last month the out-fall pipe of the main sewer has been carried upwards of 100 feet further out to sea, lest any danger should accrue to the town from the accidental exposure of the orifice of the pipe at low-water, and the wafting of pernicious effluvia over the dwellings of the inhabitants, poisoning the air and damaging the public health. A still further reduction in the annual rate of mortality may be confidently expected as the labours of the Board approach completion, and every precaution is adopted that science can suggest.

In spite, however, of the mass of evidence on this subject, people will not give that attention to it which it demands, and the Registrar-General, in his Report for 1864, after his summary of the summer quarter, is driven to exclaim, 'Why is the mortality of the Isle of Thanet, including Ramsgate and Margate, still 23? Why is the mortality of Hastings 24? Why is the mortality of Clifton 24? Why is it in Yarmouth at the rate of 25 in 1000?'

The following Table G will enable us to make a comparison of the death-rates prevailing at some of our chief places of resort in England :—



TABLE G.

MORTALITY IN THE DISTRICTS CONTAINING SOME OF THE  
PRINCIPAL ENGLISH WATERING-PLACES.

DISTRICTS.	Popula- tion, 1861.	Deaths registered in the Quarter ending 30th June 1864.	Annual Rate of Mortality to 1000 living in the	
			10 Years 1851-60.	3 Months ending 30th June 1864.
Tunbridge (including Tunbridge Wells), . . . . .	34,271	180	20	20
Thanet (including Ramsgate and Margate), . . . . .	31,862	186	21	23
Dover, . . . . .	31,575	164	20	20
Hastings, . . . . .	26,631	166	18	24
Eastbourne, . . . . .	10,721	49	17	17
Brighton, . . . . .	77,693	405	22	20
Worthing (including Littlehampton and Arundel), . . . . .	18,921	84	18	18
Isle of Wight (including Ryde, Ventnor, Newport, and Cowes), . . . . .	55,362	210	17	15
Mutford (including Lowestoft), . . . . .	24,050	113	20	18
Yarmouth, . . . . .	30,338	195	25	25
Weymouth (including Melcombe Regis), . . . . .	27,291	156	18	21
Newton Abbot (including Dawlish, Torquay, and East and West Teignmouth), . . . . .	59,063	238	18	16
Barnstaple (including Ilfracombe), . . . . .	36,293	156	18	18
Bath, . . . . .	68,336	419	22	25
Clifton (including part of Bristol City and Bristol Workhouse), . . . . .	94,687	602	21	24
Cheltenham, . . . . .	49,792	213	19	17
Upton-on-Severn (including Malvern), . . . . .	21,010	107	20	20
Warwick (including Leamington), . . . . .	44,047	234	21	21
Ashborne, Bakewell, and Chapel-en-le-Frith (including Buxton and Matlock), . . . . .	66,046	332	20	20
Scarborough, . . . . .	30,425	180	21	22
Whitby, . . . . .	23,633	139	20	23
Kendal, . . . . .	37,463	182	19	19
Pembroke (including Tenby), . . . . .	29,003	149	19	19
Aberystwith, . . . . .	25,464	138	19	21
Bangor, . . . . .	36,309	206	20	22
Anglesey, . . . . .	38,157	228	20	24



9. *Dover as a Health-resort and Place of Residence.*

It only remains now to recapitulate briefly the characteristic features of the climate of Dover, to show in what respects it differs from that of other watering-places, and to indicate the diseases for which it is adapted, and the patients who may expect to derive benefit from a residence here.

The impression left on the mind after living in the town for some time is, that Dover possesses a climate pre-eminently bracing, tonic, and dry; an impression which is strengthened and confirmed by a reference to the meteorological tables. It varies, however, at certain seasons of the year, and for a few weeks Dover can hardly be recommended as a residence except to the robust and strong. If we divide the year into four parts, assigning to each its proper character, it may be thus classified:—

December, January, February, March,	. . . . .	<i>Cold.</i>
April, May,	. . . . .	<i>Temperate.</i>
June, July, August,	. . . . .	<i>Hot.</i>
September, October, November,	. . . . .	<i>Mild.</i>

Our hottest month is July, and would hardly be enjoyed by any except those who really luxuriate in hot weather. Invalids should postpone their visit to the next month, and thus escape the heat, which would certainly be trying to them. May and June are lovely months, living in the open air upon the beach very pleasant and agreeable, the heat enjoyable, and moderated by occasional refreshing showers. The fine weather of August and September is often prolonged into November, and a sort of second summer occurs before the final setting in of winter, just as happens at St. Leonards. Our winter is by no means cold as compared with other sea-coast towns; indeed, with the exception of January and March, our winter months may be said to be quite temperate, and sometimes even mild. January is our coldest month, but as the atmospheric moisture is not excessive, the air is always dry and bracing. A residence in



Dover cannot be recommended to any one during the month of March. The easterly winds which prevail all over England at this season, coming over the icy waters of the Baltic and the frigid floods of the Continental rivers, are keenly felt here. Every now and then one meets with people who really *enjoy* an east wind! And these would probably look upon Dover as a sort of paradise, in which the month of March should always be passed.

But those invalids who would fly from the obnoxious wind must not look for perfect shelter in England, for I am unacquainted with any place in this kingdom which can boast of a site entirely protected from easterly gales.

It is not easy to convey to others a correct notion of any climate, except by referring it to some well-known standard for comparison. Taking St. Leonards on the one hand, as an example of a soft, mild, and dry climate; and Brighton, on the other, as being keen, bracing, and very dry, Dover may very fairly claim to be regarded as occupying an intermediate position between them both. It is neither so bracing and keen as the one, nor so soft and warm as the other. The reasons of this difference are obvious. Brighton is for the most part upon an elevated site, St. Leonards on the sea-level, protected by overhanging cliffs, Dover a few feet above it, but with sheltering hills further removed to the rear. Such is the effect of situation. It has been said that Brighton possesses two varieties of climate—at the west end of the town, on a level with the sea, soft and mild; and at the east end, upon the cliff, keen and bracing. If the proprietor of the South Foreland meadows here should ever be induced to erect villas upon them, approached by a zigzag road from East Cliff, he will confer a similar possession upon Dover, and enable it to rival Brighton in the bracing keenness of its air.

From this hasty survey of the climatic peculiarities of Dover it will be apparent to what diseases it is suitable, and to what ill adapted. To begin with, it would be injudicious to send phthisical patients here in the later stages of disease; such a



proceeding would only hasten the end, the dry and bracing air quickening and stimulating that combustion of the tissues which is already only too active. In these cases there is little or no hope of recovery, and it is rather a question of prolonging life or dying easily, than of renewing the constitution or curing the disease : in short, a place should be sought, at once warm, moist, and relaxing, where the vital processes are performed with less energy.\*

On the other hand, a residence here in the early stages, as soon as the disease is manifest, is attended with the greatest benefit. For what is it that we require in order to arrest the progress of the malady? Nothing less than a general renovation of health. According to modern views, phthisis is simply a disease of nutrition, a malady of the digestive and assimilative systems, and of the blood, associated with depressed vitality generally. The object of all true treatment lies in endeavouring to invigorate the digestive organs, to improve the condition of the blood, and thus to renovate and strengthen the system at large. A dry, cool, and bracing climate, which sharpens the appetite and braces the nerves, is much more likely to conduce to this result than a moist and relaxing one, which is apt to produce languor even in those not afflicted with disease, as well as to blunt the appetite, and to throw the whole digestive system into disorder. That climate is best which will enable the invalid to take exercise daily without exposure to the extremes of heat and cold, and such is to be found at Dover for three-fourths of the year. Dr. Henry Bennet states, as the result of his experience, that 'in cases of phthisis extreme heat should be avoided during the summer, as calculated to accelerate the progress of the disease. The patient should indeed be kept in a temperature below 70° Fahr.' And again, 'Practically, my own experience, and that of many other observers, shows that consumptive patients do best in a dry, cool, sunny region, and that they are rather damaged than improved by a warm, moist climate.'—*Lancet*, October 13, 1866.

Dr. Copland says that 'change of climate is one of the



chief remedies for *chronic bronchitis*, and for the advancement of convalescence from the acute and asthenic varieties of the complaint.' Oftentimes a patient will linger on, and make no progress beyond a certain stage of recovery; the bronchial mucous membrane is relaxed, its vessels have lost their usual tonicity, and a troublesome expectoration continues in spite of every remedy. Now, to send such a one to a warm, moist climate, is clearly to make matters worse; but let the warm and dry atmosphere of a sea-side town be tried, the nearer the sea-level the better, where the atomized spray from the waves can be inhaled on the public promenade, and the effect is magical: expectoration decreases, the night's rest is unbroken by frequent cough, strength is gained, and recovery rapidly follows. It is neither more nor less than adding an internal salt-water bath to the tonic influence of atmosphere, and in many instances this is sufficient to effect a cure without additional medical treatment.

It is not every case of *chronic bronchitis* that is benefited by a residence in Dover. The same discrimination is necessary in selecting the climate proper to each, as in phthisis. Much confusion exists in the professional mind as to the *real* merits of particular climates, because patients bring back conflicting reports of the benefit or otherwise which they have derived from them; but if greater discernment were exercised in the selection of the climate suitable for every patient individually, this hazy mist of uncertainty would be gradually cleared away. Speaking generally, the victims of chronic bronchitis may be divided into two classes, the one embracing those who are benefited by a warm and moist climate—these are for the most part the aged, who have suffered for many years, and persons of lymphatic temperament and lax fibre; the other comprises those for whom a dry and bracing atmosphere is adapted, and includes young people whose first attack is of more recent date—those of sensitive nervous system, with small pulse and languid circulation. It is to these last only that the climate of Dover can be recommended as capable of conferring per-



manent benefit. To the former, the moisture and warmth of Devonshire and the Isle of Wight would be much more congenial.

Those suffering from *Dyspepsia* in any of its varied forms, but especially where the digestion is sluggish and painfully performed, invariably do well at Dover. A small and capricious appetite gives place after a short residence to one sufficiently ample; and the lowness of spirits and hypochondriasis and irritability of temper, which one regards as almost inseparable from indigestion, yield to buoyancy of spirits and almost perfect geniality. This is to be traced probably to the dry and bracing character of the air. Dyspeptics are very susceptible to atmospheric changes, and cheerfulness and bad weather are seldom found together.

Dr. Copland has offered a theory in explanation of this circumstance, and it is so ingenious that I reproduce it here:— ‘Moist air is a good conductor of electricity, dry air a bad one. The human body receives electricity constantly from the earth with which it is in contact, and probably develops it through the organic processes. In dry weather the electricity is retained in a great measure, and the body becoming loaded with it, the nervous system is stimulated, and buoyancy and cheerfulness of mind follow. In damp weather, on the contrary, the moisture of the atmosphere acts as a conductor, and constantly carries away the electricity from the body. Thence it is at a minimum, and mental depression follows.’ And Dr. Henry Bennet adds, ‘According to this view the depression and languor experienced by delicate susceptible persons in summer, when the sky, covered with dense clouds, and the moist air portend storms, when “there is thunder in the air,” is not to be attributed to the generally received cause. Instead of receiving too much electricity, as is commonly supposed, the body is losing too rapidly its own electricity. Hence the depression, according to this charming theory.’<sup>1</sup>

Patients suffering from *chronic diarrhœa* or *dysentery*, as well

<sup>1</sup>Bennet's *Winter in the South of Europe*.



as those who have been long resident in tropical climates, and are troubled with constant looseness of the bowels of a dysenteric character, always find their symptoms alleviated at Dover. This is probably due to the peculiar character of the water, and the analysis given in a previous page affords good grounds for the belief. The dryness of our subsoil and atmosphere may possibly also help to check the tendency to relaxation. But whatever the correct explanation may be, the fact remains; and cases have come under my notice here of spontaneous cure occurring after a few weeks' residence, without medical intervention.

Dover is hardly the place to recommend for *rheumatic* subjects, unless it be in the summer, during the warm season. Those who have suffered from rheumatism know pretty well what an east wind signifies to them, and what pain and discomfort follow in its wake. After the months of March and April, hot salt-water baths are as enjoyable here as at any other warmer watering-place. But as soon as the cold weather sets in, and easterly winds may be expected, a more sheltered position should be sought without loss of time. No inland places can offer such a warm retreat as can be found in towns along the southern and western coasts. It is a popular delusion that these shores are colder than further inland; but the Gulf Stream expends its influence upon the coast more immediately, and bestows a higher temperature there than in the interior of the kingdom. Mr. Glaisher's Meteorological Tables published in the Registrar-General's Reports afford abundant evidence on this point, and are quite conclusive.

It need hardly be said that the *strumous affections of children, abscesses, rickets, softening of the bones, joint diseases*, and, in short, all cachectic conditions of the system whatsoever, derive benefit from a *prolonged* residence here. It is useless to send children with weakly constitutions and still more weakly bodies to Dover, and expect to see them return in two or three weeks' time healthy, robust, and strong. It is almost next to impossible that much perceptible improvement can be



acquired in so short a time. Sickly and delicate children, especially if there is any strumous taint in the constitution, should spend at least three or four months of the year here; or, better still, should be sent to one of the schools in the town, in order to have the continuous advantage of the sea-side. So far, so much may be said of most places along the coast, and cachectic patients will always improve by the sea, but a very large acquaintance with strumous disease has convinced me that it is in damp, moist, and relaxing places that its worst forms are seen; and if the full benefit of the sea is desired, such patients should not be sent to damp situations, but rather to those towns with a dry subsoil which enjoy a good and healthy geological position. It is in these respects that the superiority of Dover to other watering-places is as much manifest as in the excellency of its climate and water-supply.

Of late years another malady, if it may be so called, has sprung up among us—*sleeplessness*. Whether this is the product of the restless activity of the age, and the prodigious brain-work that is daily performed by most men of active minds, it is hard to say. One thing is certain, the affliction is of quite recent growth; or if it had existence in former days, it was by no means so general as it is now. Some cases that have come under my notice could be distinctly traced to prolonged mental toil, or to injudicious late reading before retiring to rest. Other cases could not be referred to these causes, and least of all could they be suspected of mental toil, or of anything approaching brain-work. One feature in the complaint is, that the sufferers are mostly persons of some position in society, and the majority of the cases are of most obscure origin. Nothing of the kind has been observed by me in this town, and from the fact that a former very wakeful patient always sleeps well when here, and that a good many people complain of feeling drowsy shortly after their arrival, it is possible that there may be something of a soothing nature in the atmosphere peculiarly suited to these cases of sleeplessness. At any rate, the experiment of a residence in Dover would be



worth trying in preference to the persistent use of morphia and opium, or some other narcotics.

Lastly, *facility of access* is an important consideration in the choice of a sea-side residence. Here again, just as in climate, Dover occupies a position midway between Brighton and St. Leonards. Brighton is distant from London about  $1\frac{1}{4}$  hours, St. Leonards  $2\frac{1}{2}$  and 3 hours, and Dover 2 hours.



