ORIGINAL COMMUNICATIONS.

EXAMINATION OF DIFFERENT OPINIONS AS TO THE VALUE OF THE CLIMATE OF MADEIRA IN CHEST DISEASE.

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REMEDIAL agents used in the practice of medicine have, in all ages, had various degrees of importance attributed to them. In some cases, the assumption of the almost infallibility of newly introduced medicines in effecting cures has gradually led to their disuse; for, the exaggerated promises of the recommender not being fulfilled, the opposite view has become general. Thus, unmerited neglect has often been thrown upon many really useful adjuncts of the remedial art, which, highly beneficial when applied in proper cases and under right circumstances, have failed when used improperly; the error being unjustly attached to the remedy, and not, as it ought to have been, to its misapplication. The generality of mankind are too apt to look to specifics for the cure of ailments, overlooking the fact that diseased action rarely continues long the same. The products of diseased action, as effusions, depraved secretions, etc., often become themselves the disease to be treated, the primary state having ceased or changed. We thus ascertain that no one remedy can be universally applicable to the varying phases of a disease; and although it may be, and often is, an essential link in the chain of treatment, it can be correctly viewed only as contributing its subordinate though necessary help in assisting the whole means used, and aiding the natural powers to throw off diseased action, and thus ensure a return to healthy function.

Climate appears at the present time to be placed much in the position of the remedial agents just alluded to; at one time being too highly estimated, and by many looked upon almost in the light of "a cure", which necessarily has led to disappointment. Such an extravagant expectation not being realised, the idea has gradually spread that climate has little or no effect as a remedial agent, and its undue depreciation has thus ensued. Hence, in this as in many other cases where opinions differ, we shall find that a middle course is nearest akin to truth; and that by following it we shall not be so far misled, as others who adopt extreme views. No one *personally* acquainted with the effects of a well selected climate in disease can deny its great efficacy in many complaints, especially in various chest diseases, and in consumptive cases, when these are sent out in an early stage, and the patient behaves with common prudence. Unfortunately, such favourable results induce a host of most unsuited, often literally dying people to try this remedy, of course for the most part unsuccessfully; and then climate is declared by the surviving friends to be a useless agent. To such an extent had this influx of unsuitable cases arrived at one time in Madeira, that the late Dr. Renton published a paper, pointing out the great evils of the practice, and forcibly showing the inutility and cruelty of sending far advanced cases abroad, in the vain hope of recovery,—a remonstrance which, for some time, had the beneficial effect of preventing such indiscriminate abuse of climate.

The beneficial effects of Madeira in suitable cases are well known to the resident medical men; but, to ensure favourable results, the invalid must shew prudent conduct and follow hygienic rules. Such persons generally do well; and there is no doubt that many, who would have been in their graves if they had remained in a variable climate, have been restored to their friends by a temporary residence in one more genial, where, while avoiding most of the exciting causes of lung disease, they could invigorate the general health by means not available in England during the winter and spring months; thus enabling the system to throw the tubercular materials out of the blood, if they exist only there, and, if deposit has already ensued, to keep it unirritated and unsoftened, and so to arrest the onward progress of disease. I have witnessed, in cases very recently

landed, and where the physical signs have been exceedingly slight, rapid and extensive tubercular deposit ensue in the lungs from excesses combined with imprudent exposure to the midnight air. Slight catarrh has come on; and this fixed irritation has appeared to be all that was necessary to cause a rapid accumulation of the deposit in the lungs. Had there been no imprudence, and no lung irritation, in all probability the consumptive materials might, in the course of time, have been safely eliminated from the system, without being deposited in the lungs.

It is greatly to be regretted that much of the benefit of climate is entirely lost, from the imprudent conduct of many who come out, and act as if climate were to do everything, themselves nothing. These persons, content at home, and, whilst under the watchful eye of anxious relatives, considered and acting as invalids, on becoming their own masters abroad, throw off all previous restraints, freely indulge in various imprudencies, and, when their disease has gained ground, declare (in Madeira at all events) that their impaired health arises entirely from "the relaxing effects of the climate". Of these alleged effects their friends and doctor at home are duly informed; nothing, however, being said of late dinners, evening parties, dances, concerts, cigars, and stimulants of various sorts, etc.; these, of course, not having in their opinion aided in breaking up the general health.

The leading members of the medical profession give sufficient evidence of their favourable opinion of climate, by recommending their patients to avail themselves of its benefits. In confirmation I shall quote the opinions of Sir J. Clark and Dr. C. J. B. Williams, and shall afterwards investigate the grounds upon which an unfavourable opinion has been advanced by others.

Dr. C. J. B. Williams writes thus: "Under treatment and favourable circumstances of air and climate, these symptoms and signs have been gradually removed, in some cases entirely, in others partially, but to such an extent, that the patient's health has been in a great degree restored. It may perhaps be said, that we have no certain proof that these cases were phthisical, or, if they were so, that the phthisical lesions were entirely removed. I admit this, but maintain that the existence of phthisis was as much proved as it ever can be in its early stage—that precisely similar cases, when neglected, commonly run a consumptive career; and we are not aware that such a combination of signs and symptoms can be produced but by lesions, which essentially have a phthisical tendency."

Dr. Mackness, quoting Sir J. Clark, writes: "A cold, damp, and variable climate not only gives the predisposition to this disease (*i.e.* consumption), but becomes its exciting cause, and determines in an especial manner its local manifestation in the lungs. While, therefore, invalids thus predisposed continue to reside in a climate which fosters their disease, but little relief must be expected from any medical treatment, however judiciously employed. It becomes an imperative duty for physicians to advise such patients to resort to a more genial climate."

Sir James Clark thus proclaims his opinion: "The influence of climate over disease has been long established as a matter of fact; and physicians have, from a very early period, considered change of climate and change of air as remedial agents of great efficacy. This opinion is supported both by reason and experience. From the application of climate to unsuitable cases (*i.e.* its misapplication), and the resorting to it as a last resource, it need not excite surprise that success has not more generally attended the practice of sending invalids abroad; nor even that the result should have been such as to bring the remedy into discredit. The fault, however, is to be sought for, not in the remedy, but in the manner in which it has been applied." Sir James Clark then states his conviction, that we possess in change of climate, and even in the more limited measure of change of air in the same climate, one of our most efficient remedial agents, and one, too, for which in many cases we have no adequate substitute.

The late Dr. Andrew Combe, so well known by his pub-

lications on the subject of preserving health, was most earnest in always inculcating and practically demonstrating the importance of hygienic rules for the preservation and restoration of health. Climate was always ranked by him among remedial agents of high efficacy, and he carefully secured its advantages in his own case; for, in writing to a friend, after having resided in Madeira, he says, "If I must go abroad, I shall most likely return to Madeira, simply on the ground that, if I must forego the pleasures of home, it is better to resort at once to the most advantageous climate, than to adopt the half measure of going to Italy, Jersey, or the south of England." (White's *Madeira*.) When in Italy, Dr. Combe considered the climate as unsuited for invalids in an advanced stage of disease, though he did not take such an extreme view as Dr. Burgess, a recent author on the climate of Italy, who declares change of climate in disease to be a delusion. He (Dr. Burgess) writes, "There is no greater popular delusion than the belief in the existence of some undefinable specific virtue in the climate of Italy for pulmonary consumption. This 'foreign climate delusion' is not confined to the rich invalid," he adds "it is only when the disease is confirmed, and softening exists, that, in the great majority of instances, the patient seeks in a foreign clime that relief or cure, which he believes nature has denied him in his own."

Sir James Clark has clearly explained that climate is not beneficial in such unsuitable cases; and that to use it only as a last resource is merely to abuse a remedial agent of acknowledged efficacy. When it is properly used, and under the most favourable circumstances, the invalid is to remember that the change only places him in a better position for the hygienic treatment of his disease; and that, without prudence and self-control on his part, little good will ensue from mere change of locality. The idea of climate being a cure for phthisis, Dr. Burgess says, is "a popular delusion". It is to be hoped that no medical man of the present day ranks it higher than a curative agent of great efficacy when properly applied. He remarks, in continuation, that the influence of climate on health and disease has of late attracted considerable attention; hence, instead of vague assertions or traditionary fame, authenticated facts are essentially requisite to establish the sanitary character of any given climate. At the end of his preface, Dr. Burgess concludes thus: "Although several of the subsequent statements may be opposed to various popular notions prevalent in England, no opinion has been hazarded without the support of positive data; consequently, readers can judge whether the conclusions I have enunciated are fully warranted by the evidence upon which they are virtually founded." Fully admitting the importance of these remarks, and the great desirableness of receiving only well authenticated facts, I shall proceed, in compliance with Dr. Burgess's request, to ascertain whether or not his conclusions with respect to the climate of Madeira are erected on such a foundation as to warrant his readers in receiving them as correct.

Amongst other remarks, I shall test the following: "That the popular faith in the virtues of this climate in pulmonary consumption is founded, for the most part, on tradition and romance; that, in short, the climate of Madeira, as regards the cure of phthisis, is as great a delusion as the climate of Italy." This is strongly put, and in forcible language; but I hope to give sufficient proof that, while the Madeira climate does not fulfil the popular delusion of being a cure, it is an agent of great curative efficacy in aiding proper treatment.

Dr. Burgess, having no personal knowledge of the island, of its climate, or of the results of cases sent out, forms his opinions from two works, viz., White's *Madeira*, and Dr. Mason's *Treatise on the Climate and Meteorology of Madeira*; and from the latter, the opinions of the late Drs. Heiniken and Gourlay are incidentally brought in. Mr. Harcourt's book on Madeira, published by Mr. Murray at the time when Mr. White's came out, is not mentioned; his opinion is in favour of the climate. Dr. Burgess first quotes from White's *Madeira*; but, before proceeding to examine the

extracts he has made, I may remark, that Mr. White is described as enthusiastic in his praises of Madeira, and grateful for restored health. Any one having the pleasure of being acquainted with Mr. White must be well aware that he is not of an enthusiastic disposition, and that he is peculiarly well qualified to afford correct information concerning Madeira, for the following reasons, viz., a residence of more than fifteen years on the island, his acquaintance with the people and their customs, and correct knowledge of their language. It is pleasing to find Dr. Burgess recording Mr. White's gratitude for restored health, attributed entirely to his sojourn in Madeira; and it is equally gratifying that I am enabled to add, that he is now living in continued good health in his native land—one out of many proofs of the good effects of climate.

In the quotations which Dr. Burgess makes from Mr. White's book, he writes, that Mr. White is obliged *reluctantly* to make the following confessions:

1st. That pulmonary consumption and scrofula do occur, but *less frequently* than in more changeable climates.

2nd. That there are different eddies or currents caused by the vicinity of mountains, which render a vane or anemometer of little use.

3rd. That the sky is not so clear, nor the atmosphere so calm, as in Italy.

I shall consider these remarks in the order in which they are placed above.

First, with regard to the statement "that consumption and scrofula do occur (in Madeira), but *less frequently* than in more changeable climates." To proceed with Dr. Burgess's extract: "Mr. White, a *non-medical* writer on the subject, is enthusiastic in his praises of the climate, and evidently grateful for the blessing of restored health, which he attributes entirely to a sojourn at Madeira." He (Mr. White) "remarks, without advancing any pretensions to medical knowledge, or the physiological effects of climate, that a residence of many years at Madeira, and a lengthened pursuit of health among the most favoured localities of Europe, enable the writer to add his testimony to the decided superiority of the climate of Madeira over all those he has visited. Cold winds, or close, sultry weather, are little known: and a continuous summer may be enjoyed, without suffering from extreme heat or cold, or a continuance of damp or wet weather. The most remarkable feature of the island is probably the mildness and equability of its climate, and its consequently beneficial effects in pulmonary and other complaints." Dr. Burgess remarks upon the preceding, "Notwithstanding this eulogium, the writer (Mr. White) has some misgivings as to the perfection of the climate, and reluctantly admits that, though so 'very equable', the climate of Madeira is not altogether free from changes, which constitute there, as well as elsewhere, the exciting causes of pulmonary affections. Pulmonary consumption and scrofula occur among the natives of Madeira, but *less frequently* than among the natives of more changeable climates." Upon referring to Mr. White's book, chapter ix, it appears that Mr. White is not the author both of the eulogium and subsequent misgivings as to the equability of the climate; for it is expressly mentioned, that the following brief remarks were obtained from one of his medical friends, who gives his opinion thus: "Although the climate of Madeira is so very equable, it is not altogether free from changes which constitute here, as well as elsewhere, the exciting cause of pulmonary and inflammatory affections." Dr. Burgess omits the following, which follows in continuation: "These, however, as may be supposed, are comparatively rare among the better classes, and occur chiefly among the hardworking poor, who are more exposed to this cause, and to sudden chills of the surface while perspiring profusely. An epidemic catarrh not unfrequently makes its appearance about the months of August and September, or before the annual rains which usually occur in October. It is now pretty well understood, that no climate affords entire exemption from scrofulous diseases. Whenever the exciting causes are applied,

in whatever part of the world, these diseases manifest themselves. Pulmonary consumption is connected with what is called the scrofulous diathesis, and occurs among the natives of Madeira, but prevails much less among them than it does among the natives of more changeable climates." That it should occur is not to be wondered at, when we find many of the causes of the scrofulous diathesis in full operation among a large proportion of them, viz., imperfect food and clothing, deficient ventilation of their low, damp huts, combined with overwork.

A short extract, like the one made by Dr. Burgess, seldom affords a clear insight into an author's meaning; and I trust that, by supplying the sentences entire and unmutated, the writer's real meanings have been placed in a more distinct point of view; and that, being so viewed connectedly, they simply show the well known and acknowledged fact, that *causes* of disease, such as imperfect food, scanty clothing, deficient ventilation, damp wet dwellings, joined to overwork, do exercise their baneful influence in Madeira, as elsewhere, but with this important limitation, that they do so with less effect than in other places; that scrofula and consumption occur among the natives of Madeira, but *less frequently* than in more changeable climates. The diseases attributed to the changes in the weather are especially noted in Mr. White's book to be "pulmonary and inflammatory, chiefly occurring amongst the poor hard-working people, from sudden chills causing checked perspiration."

The second quotation extracted by Dr. Burgess is also imperfect, from beginning in the middle of a sentence. It is thus given: "Yet, in this almost perfect climate, the same writer (Mr. White) informs us that the different eddies or currents render either a vane or anemometer of little use." The *entire* sentence gives the reason: "From the position of the basin of Funchal, open only towards the south, it is difficult to ascertain the true course of the winds, and [here Dr. Burgess only begins] the difficult eddies or currents caused by the vicinity of mountains render either a vane or anemometer of little use."

Dr. Burgess's third quotation is to the following effect, "That the sky cannot be generally so clear, nor the atmosphere so calm, as that of Italy, from the position of the island, and nature of its surface." I again supply the whole sentence, as the extract begins in the middle of one, after a comma: "From the position of the island of Madeira, and the lofty and rugged nature of its surface, it will appear sufficiently obvious to every one conversant with the causes of the formation of clouds and the trade wind [here Dr. Burgess commences the extract], that the sky cannot be so clear, nor the atmosphere so calm, as that of Italy." Mr. White proceeds: "The preceding tables, however, though compiled during a season of unusual severity, certainly one of the coldest for a great number of years, still afford a favourable result."

We subjoin Mr. McEwen's table of the comparative appearance of the sky, from Dr. Mason's work, and quoted by Mr. White:

Blue or clear sky, . . .	240 times.
Cloudy, . . .	223
Hazy, . . .	30
Overcast, . . .	30
Threatening, . . .	19
Rain, . . .	13
Showers, . . .	11
Fogs (none) . . .	0
566 observations.	

Thus, showers or rain fell twenty-four times in 566 observations. The clouds rarely descend lower than the Mount Church, an elevation of more than 1,800 feet; and form a most necessary and agreeable screen from the sun's rays.

The atmosphere is stated by Dr. Burgess not to be so calm. I append the following table in refutation:

Calm, . . .	102
Light winds, . . .	130
Fresh winds, . . .	82
Strong winds, . . .	9
Presumed gale, . . .	1
324	

So that, out of three hundred and twenty-four observations in this climate, alleged to be deficient in calmness, we find only nine strong winds, and one presumed gale.

Dr. Burgess gives, on the authority of Dr. Mason, the following quotation, with reference to the variability of the weather at Madeira, and adds, that it will perhaps surprise his readers. If the reader has ever resided at Madeira, we think he will be astonished at the following statement: "The very frequent and remarkable variations in a series of years, incontestably prove that Madeira is no more to be relied on than any other place for certainty of fine weather; and that it has equally its annual variations of temperature." Dr. Burgess's own opinion as to the requisites in climate for an invalid is as follows: "It is not heat, but equality of temperature, even if it were at a low range, that is needed by the class of invalids referred to; and, whenever an approximation to that quality of climate can be found, there should the consumptive invalid reside." I quite agree with Dr. Burgess's opinion, that equability is an essential element in any climate used for invalids with delicate chests; and I think that Madeira supplies that desideratum, in addition to having home comforts which most other foreign places of resort sadly lack. Certain I am, that changes injurious even to delicate persons do not occur there, and that the most sensitive invalid need never suffer more than a temporary feeling of discomfort. True it is, that invalids often ascribe their various ailments to the effects of climate, which would be more justly ascribed to their own frail bodies, and to the usual complications of disease.

As to the variability of the Madeira climate, alleged by Dr. Mason to exist, we extract the following, to show that other observers do not (as in other observations) confirm his opinion. Sir James Clark, on the authorities of Drs. Renton and Heiniken, both scientific men, and many years resident on the island, writes thus: "When we take into consideration the mildness of the winter, the coolness of the summer, together with the *remarkable equality* of the temperature during the day and night, as well as throughout the year, we may safely conclude that the climate of Madeira is the finest in the northern hemisphere." The winter at Madeira is 20° warmer than at London, and has no fogs; the summer is only 7° warmer, and is free from the oppressive closeness so common there. "No one", writes Sir James, "need breathe, night or day during winter, a lower temperature within doors than 64°, or in the country 74°." That is only ten degrees of mean difference of Fahrenheit between summer and winter; whereas a summer day in England has often greater changes. The following tables show how little variability of temperature there is; two of the years' observations having been made nearly one hundred years ago:

Date.			1847.	1749.	1750.	1850.
January . . .	59-50	57-71	63-50	—	64-00	61-00
February . . .	58-50	60-28	63-14	—	63-80	61-14
March . . .	61-06	61-86	64-22	64-06	66-50	62-63
April . . .	62-50	63-03	64-40	66-07	66-47	60-50
May . . .	63-50	63-44	64-76	66-53	66-25	67-33
June . . .	65-00	66-90	68-72	68-75	69-06	66-19
July . . .	70-00	70-04	72-50	74-58	73-00	69-01
August . . .	73-00	71-88	73-58	75-07	75-40	69-70
September . . .	71-50	71-28	71-94	76-53	74-93	69-24
October . . .	67-50	66-76	71-06	72-20	73-87	69-58
November . . .	62-70	63-06	67-64	68-60	70-82	66-00
December . . .	60-50	61-44	63-86	64-00	66-27	62-51

Authorities: Sir J. C. White, Harcourt. Mr. White. (Interval of a century.)

Sir James Clark states the mean annual temperature of Madeira to be 64°56' Fahr.; the mean difference between

summer and winter, $9^{\circ} 38'$; mean difference between the coldest and hottest months, $14^{\circ} 50'$; the mean difference between successive months, only $2^{\circ} 41'$; differences between winter and spring, $2^{\circ} 70'$; between spring and summer, $7^{\circ} 13'$; between summer and autumn, $2^{\circ} 10'$; between autumn and winter, $7^{\circ} 73'$. The differences of successive months are: between January and February, 1° ; between February and March, $2^{\circ} 56'$; between March and April, $1^{\circ} 44'$; between April and May, $0^{\circ} 50'$; between May and June, 3° ; between June and July, 5° ; between July and August, 3° ; between August and September, $1^{\circ} 50'$; between September and October, 4° ; between October and November, $4^{\circ} 80'$; between November and December, $2^{\circ} 20'$; between December and January, 1° .

Mr. Harcourt, writing from his personal experience of the climate, gives his opinion as follows: "The mean temperature of Funchal throughout the year may be stated at 66° Fahr.; February and March being the coldest, August and September the hottest months. Even between these months there is not a greater mean difference of temperature than 12° . It is this uniformity in which the excellence of the climate consists. The causes which are instrumental in forming such a climate in Funchal are threefold: 1st. The lofty hills, which immediately surround it on the north, completely shelter it from the weather at all points of the compass except from south-east to south-west. 2ndly. The absence of wood, while it impairs its beauty, improves its climate; and 3dly, the regularity of the alternations of the land and sea breezes tends to preserve a delicious equality of temperature."

"This climate is certainly fine enough to please even fastidious people. A range of 12-14 degrees between summer and winter, surely does not amount to 'frequent and remarkable variations'; and even this small amount of difference between the hot and cold months may be greatly, and almost entirely, avoided, by going out of Funchal during the summer, which it is the custom to do. In the mountains the summer heat is less than in England; but, at this elevation, there is too much damp for an invalid, though healthy persons enjoy such mountain air, and are braced by it. Lower down the air is drier, and an invalid can have summer with the thermometer rarely exceeding 72° or 74° ." In the Isle of Wight, the most favoured of English places for consumptive persons, the difference between the hot and cold months is 28 degrees, being fully double what it is at Funchal.

I shall now proceed to investigate the extracts in Dr. Burgess's book, taken from Dr. Mason. Before, however, detailing the results of Dr. Mason's observations, Dr. Burgess informs us, that the instruments used were improperly placed, a fact which alone vitiates the whole of the results. The instrument chiefly used was the hygrometer, which is very easily affected by the slightest causes, arising from local currents of air, moisture, or ill-chosen locality: and it is much to be regretted that so much zeal and industry as the late Dr. Mason exhibited, should be rendered of no avail, not from one, but from many causes of inaccuracy. Dr. Burgess says: "I shall now place before the reader the leading facts contained in Dr. Mason's book"; and a little farther on, "a summary of Dr. Mason's observations will enable the reader to form his own opinion as to their merits, and the reliance to be placed on them." Mr. White, as usual, explains matters more fully and correctly. He writes: "The situation, where Dr. Mason's observations were made, is notoriously one of the least favourable for that purpose in the outskirts of Funchal; and this circumstance, together with the fact of his hygrometer being placed in a close room, between two windows, near an open tank, and surrounded with trellised vines and vegetation, independent of the acknowledged severity of the season during which they were made, will sufficiently account for the difference existing between his observations and those of other parties." Independently of other sources of error, the immense exhalation from the leaves of plants would vitiate hygrometrical observations. An experimenter, placing his instruments in a place which has marked peculiarities, can obtain only

results appertaining to that locality, and cannot correctly affirm, that observations thus made truly indicate the general climate of a country. No one would place an hygrometer in a Lincolnshire fen, or an Irish bog, to decide the general humidity of the climate in either country; nor can more weight be justly allowed to Dr. Mason's observations, than that they indicate the humidity of the atmosphere near his own water tank. At one time it was thought that the greater humidity observed by Dr. Mason must have originated in the observations having been made in a damper season than usual; but this opinion is apparently erroneous, because the year in which they were noted, 1834-5, was a particularly good wine year, and, to secure a good vintage of full flavour, a dry season is necessary; consequently we must look to other sources for the discrepancies observed between his remarks and those of other persons. On the island, it is well known that the locality is damper than the neighbourhood around it; but the accuracy of the whole series of observations is vitiated chiefly from the improper position of the instruments, etc. Dr. Mellermaier, who has made careful observations, informs us, that the results obtained by him confirm Mr. White's, and that both prove Dr. Mason to have placed the humidity of Madeira one-third too high.

The following letter from Mr. Wilkinson of Madeira more fully explains the above:—

"Funchal, 1st June 1853.

"SIR,—In reading the book on Madeira, by Dr. Mason and Mr. Driver, edited by Sheridan Knowles, the suspicion occurred to me, that the conclusions there made with regard to the climate of the island, and drawn from the meteorological tables said to have been kept by the late Dr. Mason, were not trustworthy.

"I was personally acquainted with the late Dr. Mason, and had the pleasure of enjoying a good deal of his society while he resided in Madeira; and I know he did not reside at Sta. Luzia during the whole time the tables are given as having been kept there by him, but that he made frequent and long excursions into the country. Neither, to the best of my recollection, did he leave any one to carry on the tables during his absence. True, he always carried a small thermometer and hygrometer with him into the country; but that could have nothing to do with observations on the climate of Funchal or its neighbourhood.

"When Dr. Mason commenced his observations on the temperature, etc., of the atmosphere here, it was solely, I believe, to assist him in some improvements he was attempting in hygrometers; but, at the same time, he noted down his conclusions with regard to the value of the climate in the treatment of disease. Certainly his means of arriving at these conclusions were very imperfect. His attention was chiefly directed to the working of a Leslie's hygrometer, and of a common thermometer, hung in a cupboard. All this, of course, casts no imputation on Dr. Mason; as Mr. Driver and the editor of the book are alone answerable for the use they have made of the imperfect notes left by that gentleman at his death.

"Another circumstance, that would make his observations of little value for hygrometrical purposes, was the situation in which his instruments were placed; viz. a corridor about eight feet from the ground, and about fifteen feet from a tank holding about three hundred gallons of water. The water in the tank was renewed about every fifteen days, by a stream running into it; but was never entirely emptied, as it contained fish. The tank is of stone, entirely open at the top, and nearly on a line with the corridor. The surface of the water lies exposed to the afternoon sun, and to the current of air from the valley of Sta. Luzia. In fact, no one, who had a choice, would choose such a situation for purely meteorological purposes.

"All this is matter of personal knowledge with me; and you will easily understand why I should be of opinion that the late Dr. Mason, had he lived, would never have published his notes in the form we find them in this work.

"I remain, sir, yours truly,
"G. LUND, Esq., M.D."

"SAMUEL WILKINSON.

The objections made to the climate of Madeira, on the authority of Dr. Mason, may be classed under the following heads:—dampness, rains, injurious effects of the l'este, and precipitation of dew.

It is mentioned that London, at its mean temperature of 58°, can contain 100 parts of moisture; whilst Funchal, at 68°, can hold 200. Both calculations being made by Fahrenheit's thermometer, commence at the freezing point, 32°; add 18°, and we have the London temperature; double the temperature by 18° again, and we get 68°, the Funchal temperature, simply shewing that double the heat and double the quantity of moisture will be suspended in the atmosphere. Further, in Madeira it is suspended, and is never visible in the shape of fogs, except on the mountain tops.

Mr. Harcourt thus expresses his opinion on the alleged damp of Madeira:—"Whatever may be the moisture of the air, it is not sensible as dampness to the feelings, and certainly is not unfavourable to the healthy action of the lungs. There may be spots in Madeira, either near yam grounds, where much irrigation is carried on, or where the soil and rock, usually very porous, are so close as to retain the wet, which may be too humid for some constitutions; but, for the greater part, in the neighbourhood of Funchal, there is no visible excess of moisture, there is no fog, and there is comparatively little dew. If dampness has ever been alleged as an objection to the salubrity of this island (Madeira), it must be regarded as a complaint due to the unlucky choice of some dwelling house unfavourably placed, or to the common fastidiousness of ill health."

Dr. Mason pronounces Dr. Heiniken in error, for stating "that at the level of the city of Funchal, no perceptible dew is produced, but up the mountains it is profuse."

It is surprising how Dr. Mason could have committed such a mistake; for every resident is well aware that Dr. Heiniken is in the right, and Dr. Mason glaringly in the wrong. Sir J. Clark gives the following direction:—"Invalids particularly sensitive to humidity, are recommended to live within the limits of the town, on account of its greater dryness." Again, Dr. Mason makes the following erroneous statement:—"That, on a clear night, the quantity of dew precipitated is so great, that in a few hours many drachms of fluid may be collected." This is palpably incorrect, the experiment having been often tried in other localities, without the plate being even damped.

The l'este, a warm wind from Africa, which is not common, is described by Dr. Mason as injurious in its effects: he says that at one time it made him very well, and at another very ill. We presume that this opinion is of no more value than as it denotes the morbid feelings of a nervous invalid. The l'este does not occur every season, and is felt to produce only temporary inconvenience, and that in summer, when few invalids remain on the island: its general continuance varies between three and six days. Never having had to prescribe for any one made ill by the l'este, I conclude that Dr. Mason has overrated its bad effects. Dr. Mason corroborates the opinion of Dr. Gourlay, as to the frequency of phthisis amongst the Madeirans: the relative value of these may be gathered from the following. Dr. Mason did not speak the language of the people whose diseases he affirms that he knew, nor did he practise amongst them; consequently his opinion must have been secondhand. Dr. Gourlay did practise amongst the Portuguese, but before the stethoscope was used on the island; consequently his means of detecting chest disease must have been very imperfect. The late Dr. Renton, an excellent physician and good stethoscopist, writes:—"With respect to the question relative to the frequency of consumption among the natives, Dr. Gourlay, if he alluded to tubercular disease, has greatly overrated it." Dr. Heiniken also says:—"It has been asserted that no malady is more prevalent than phthisis with the natives of Madeira; but, so far as my own personal experience and the result of inquiries go, I incline to a contrary opinion." (Clark.)

Dr. Burgess thus sums up:—"Madeira, with all its sanitary fame, is no exception to this rule",—that is, it affords

no proof of salubrity, or of the beneficial effects of climate,—"as (to pursue the quotation) the meteorological observations of Drs. Heiniken, Gourlay, and Mason, incontestably prove." Setting all other considerations aside, we do not think that these three observers bear out this assertion in their own cases. Dr. Gourlay was not consumptive. Dr. Heiniken was originally sent out as a dying case, lived nine years on the island, and ultimately died from accidental exposure to the night air in an open boat, when returning from an adjacent island. Dr. Renton opened the body, and was astonished to find how little lung he had left. Dr. Mason, notwithstanding his neglect of means for preserving or obtaining health, and devoting himself instead "most assiduously to meteorological observations", lived in Madeira two years, this time being the full average duration of the whole different stages of phthisis in England. After this, he went to Nice. We are informed that he first visited Madeira with the belief that he would recover his health, under the alleged sanitary influence of that climate. Whilst there, he most assiduously occupied himself in meteorological investigations. From this, the conclusion Dr. Burgess arrives at is, "that the climate of Madeira, as regards the cure of phthisis, is as great a delusion as the climate of Italy." Previously, we were informed that the idea of cure was a popular delusion; but this shews its adoption by at least one medical man. The belief of medical men generally is, that no climate can cure; but that it is an essential and important aid of other means of treatment, which cannot be so efficiently carried on in a variable climate, especially during the winter and spring months.

Dr. Mason, it is stated, always felt persuaded that Nice was a place better adapted to his case than Madeira. Why he remained at Madeira two years, the ordinary duration of a consumptive case in England, with this impression on his mind, and of course, in his opinion, losing vital time, is not explained. Dr. Burgess continues:—"The fate of the author was a melancholy one, and a telling comment on the blind credulity which prevails respecting the virtues of foreign climates in pulmonary consumption." During his journey to Nice, he travelled twenty-four consecutive hours in a diligence, his only sustenance, during that period, being fruit and bread, accidentally obtained on the road: upon arriving, dysentery (it is said) attacked him, and proved fatal in a fortnight. Dr. Burgess remarks on this catalogue of imprudences, committed by a dying invalid:—"How many consumptive invalids have fallen victims abroad to the same delusion!" In my opinion, the delusion would have lain in expecting any other result than what happened. Over-fatigue, with improper food, in an advanced stage of consumption, produced the usual diarrhoea (not dysentery), and speedily proved fatal; nor, in fact, could any other termination be looked for.

We have now to consider how far the assertion is correct, "that the popular faith in the virtues of the Madeira climate, is founded for the most part on tradition and romance." The following tables, I think, prove the contrary, and shew that climate, in the majority of cases, saves the life of consumptive people, when they are sent out in the early stage, and before the disease has worked irreparable mischief. The tables of confirmed phthisis speak for themselves.

Dr. Renton's Tables, extracted from Sir J. Clark's work on Climate.

TABLE I. CASES OF CONFIRMED PHTHISIS, 47.

Died within six months after landing in Madeira .	32
Went home in summer, returned and died .	6
Left the island, of whose death we have heard .	6
Not since heard of; probably dead .	3
	<hr/>
	47

TABLE II. WITH TUBERCULAR LUNGS, 50.

Died here .	30
Left the island .	22
Still here .	4
	<hr/>
	56

TABLE III. INCIPIENT PHTHISIS, 35.

Left the island, much improved . . .	26
Improved, but not since heard of . . .	5
Have since died . . .	4

35

TABLE IV. THREATENED WITH PULMONARY DISEASE, 108.

Remained free from symptoms . . .	93
Fell off . . .	13
Lost sight of . . .	2

108

Table by Dr. Lund, from White's Madeira, shewing the number of patients, in 100 cases of Consumption, landed in different stages of the disease, in whom it was arrested, progressed, and proved fatal.

FIRST STAGE: 48 CASES.

Arrested—37.		
Duration of arrestment.	From 4 to 10 years . . .	13
	For 3 years . . .	2
	From 8 to 20 months . . .	11
	From 7 to 12 months . . .	11

37

Relapses occurred in 2 cases.

Progressed—11.		
Living.	Passed in 14 months into third stage, and slowly progressing . . .	3
	Passed in 16 months, 2 years, and 5 years respectively, into second stage . . .	3
		6
Died.	Died 5½ months after landing . . .	1
	Remained one winter at Madeira, and died the next winter abroad . . .	1
	Went out for 7 winters, and then died . . .	1
	Remained nearly 8 winters, and then died . . .	1
	Remained 1 winter, returned home, and supposed dead . . .	1
		5
		11
		48

SECOND STAGE: 24 CASES.

Arrested—5.		
Duration of arrestment.	Arrested for 15 months; relapsed, and passed into third stage. Disease again stopped for 3 months; general health as good as before the last attack . . .	1
	For 15 months . . .	2
	For 5 years . . .	1
	Came out about 10 years ago; relapsed in 1847: disease again arrested, and continues so . . .	1

5

Progressed—19.		
Living.	Much ameliorated . . .	2
	Still remain in the second stage; but the disease is slowly gaining ground . . .	4
	In the third stage: but the disease is arrested, and general health is good . . .	2
		8
Died.	Remained one winter; and, having left the island in a sinking state, supposed dead . . .	1
	Remained one winter at Madeira, and died the next winter at home . . .	4
	Died at home, 8 months after first landing in Madeira . . .	2
	Ditto, 10 months, ditto . . .	1
	Ditto, 12 months, ditto . . .	1
	Died at Madeira, 14 months after first landing . . .	1
	Ditto, 4 years, ditto . . .	1
		11
		19
		24

THIRD STAGE: 28 CASES.

Arrested—5.		
Duration of arrestment.	Remained so for upwards of 12 years . . .	1
	For 8 years . . .	2
	Left the island after 3 years . . .	2

5

Progressed—23.

Living.	Arrested for 14 months, and then began slowly to progress . . .	1
	Has progressed slowly for 15 months . . .	1
	Remained one winter, and then left, their only symptoms being moderate morning cough and expectoration . . .	3
		5
Died.	Died 48 hours after landing . . .	1
	" 6 weeks " . . .	1
	" 7 " " . . .	1
	" 9 " " . . .	1
	" 3 months " . . .	3
	" 3½ " " . . .	1
	" 4 " " . . .	2
	" 5 " " . . .	1
	" 6 " " . . .	1
	" 7 " " . . .	2
	" 10 " " . . .	1
	Died 15 months after first landing in Madeira; went home in summer, and died 3 months after returning . . .	1
	Died 4 years after first landing . . .	1
	Came to Madeira 13 years ago, and remained 7 winters; went home for 3 years; returned to Madeira for 3 winters and 2 summers; and died at home . . .	1
		18
		23
		28
LIVING.	First stage . . . 43	
	Second stage . . . 13	
	Third stage . . . 10	
DEAD.	First stage . . . 5	
	Second stage . . . 11	
	Third stage . . . 18	
		34
		66
		100

It is well known that, in chest disease, the general health must be invigorated as much as possible; and that injurious causes, exciting lung irritation, as cold, damp, and variable weather, are all especially hurtful, and carefully to be avoided. Now, in such a climate as that of Madeira, these injurious changes, and their consequent lung irritations, rarely, if ever, occur; and, when lung irritation does come on, it is much milder than at home; and there is this further advantage, that the tone of the system can be improved at the same time, by means not available in Great Britain during the winter and spring months. Cold or tepid bathing, sponging baths, moderate clothing, constant out of door exercise, riding, boating, sitting in the open air, or with open windows, are habitually used.

From the preceding observations and tables, we may consider it fully proved, that the opinion long held and expressed by the more experienced members of the medical profession, regarding the beneficial effects of a genial climate in chest disease, is the correct one; and that the statements promulgated against that opinion are not supported by facts, certainly not so far as relates to Madeira, and most probably not to Rome, Pau, or Egypt, with the proviso that properly selected—not dying—patients are sent to these localities. So far as regards Madeira, I could strengthen the details of its beneficial effects by relating individual cases; but that would unnecessarily lengthen this paper. Of one thing I am fully convinced, after many years' residence in Madeira; namely, that, in the early stages of phthisis, a person has in that place an infinitely better chance of having the disease arrested, than in England, or any other place that I am at present aware of; and that, in the latter stages, the disease is much delayed, the invalid enjoying all the comforts of life before finally sinking; and that a few cases occur, where the prolongation of life is very great. Many in Madeira live longer (say from three to four years) than the average duration of the whole three stages in Great Britain, which is limited to a period extending only to from eighteen to twenty-four months. I have cases, where this retardation of disease has extended to ten, twelve, and even twenty years; and one to twenty-five years. And many have lived on the island in perfect health, whose

brothers and sisters have, from a contrary cause, all died; or have originally come out as phthisical, and have lived free from all tubercular complaint.

August 1853.

TWO FATAL CASES OF SNAKE-BITE: WITH REMARKS.

By R. H. POWELL, M.D. Lond.

(Read before the Harveian Society of London.)

CASE I. The following particulars of a case of snake-bite were furnished by A. MacKean, Esq., late in medical charge of Mhairwara Local Battalion.

The accident occurred to a Sepoy, who was, I think (says the reporter), in the district on command; and when he was brought in, of course there was nothing to be done but to give spirits of ammonia from time to time. No particular symptoms supervened, if I except a disposition to drowsiness, and latterly acute inflammation of both conjunctivæ, for which leeches were applied to the under eyelids, and cooling purgatives administered. After the leeches had been applied, it became apparent that the leech-bites continued to bleed, and neither dossils of lint, applications of turpentine, nor of lunar caustic could command the partial bleeding from them. After the case had been altogether some three or four days in hospital, the man gradually fell into a lethargic state, from which he never could be roused. His leg was somewhat swollen on admission to hospital; and as no very urgent symptoms showed themselves, I was in hopes the case would have done well; but in this I was disappointed. It is impossible for me to say what kind of snake bit the man; nor can I positively assert it was a snake that bit him, but in all likelihood it was a case of snake-bite.

There are no further particulars to communicate.

(Signed)

N. COLLYER,

Assistant Surgeon, Mhairwara Local Battalion.

February 8rd, 1841.

The second case is reported by Mr. Davidson, surgeon, —th Light Infantry.

CASE II. Lieut. C. A., —th Light Cavalry, aged about thirty-three years, was bitten by a snake on the left instep, through a thin cotton stocking, on the night of the 11th June 1840, between nine and ten o'clock, when walking home from the regimental mess-house, and was brought to me about twenty minutes after the accident. Immediately on his being bitten, a ligature was tied tightly round the leg, and in a few minutes after a large dose of eau-de-luce (about 3 iiss), was given. On arriving at my house, he had no particular symptoms of the effect of the poison. He was anxious; the pulse was soft; he complained of soreness of his throat from the eau-de-luce. He had slight pain in the part which was bitten, the punctures were very distinct, and had a black appearance, and the foot was very slightly swollen. The part was cut out with a scalpel; * it consisted of the common integuments and cellular substance, to the extent of about nine lines in length, and eight in breadth, over the os naviculare, and on the inner side of the extensor proprius pollicis pedis. It was allowed to bleed a little; and was then touched with lunar caustic, and a poultice was applied.

About two hours after the bitten part was cut out, he became restless, giddy, and sick, with a strong inclination to go to stool, and bleeding took place from the wound. On removing the poultice, the blood was found oozing out as from a sponge; and pressure having no effect in stopping it, though no vessel of any size was cut, or could be seen, ligatures were applied at every place where any distinct point could be discovered, and then a compress and bandage were applied. In spite of this, however, the bleeding continued, and the actual cautery was had recourse to, and a firm com-

press and bandage put on. Two doses of eau-de-luce, the first of 3j, and the second of forty minims, were given by me; and afterwards, from the pain in the throat, liquor ammoniæ in forty minim doses, and then compound spirit of ammonia in drachm doses, in camphor-mixture, repeated at longer or shorter intervals, from half an hour to an hour. As the pulse became weak and slow, and as no further symptoms of the effect of the poison continued, except the oozing of blood from the wound, early on the morning of the 12th, the ammonia was discontinued. As the bleeding from the wound, though much diminished after the application of the cautery, did not stop entirely, he, on the afternoon of the 12th, commenced taking subacetate of lead, in three grain doses, with half a grain of opium, every three hours, and this was continued regularly up to the morning of the 15th.

On the forenoon of the second day (the 13th), the foot and leg were swelled and painful to the touch, but cool. The part had a *blueish* appearance, and several *purple blotches* were observed on different parts of the body, particularly on the left arm; which spots afterwards became larger and of a *darker* colour. His bowels were acted on by pilul. colocynth. c. aloes grs. viij, with pilul. hydrarg. gr. ij, at bed time, followed by an enema the next day when necessary, and his strength was supported. Excepting a slight oozing of a light-coloured watery blood from the wound, he appeared to be getting on well till the afternoon of the 15th, the fourth day after the bite. His pulse then increased in strength and frequency; he complained of headache, sickness, and loss of appetite; and became much heated, with swelling, heat, and pain of the foot and leg, nearly up to the knee. Cold lotion was applied to the foot and leg, and eight grains of extract of colocynth, with the same quantity of calomel, were given; and the bowels not having been acted on in three hours, a solution of three drachms of Epsom salts, in two ounces of water, was given every two hours. After the third dose of this, as his bowels had not been acted on, a purgative enema was given, which operated freely. After his bowels were opened, he began to take a draught consisting of

Liquor. acetat. ammoniæ 3ij.

Vini antimon. tartarizat. ʒ. xx.

Mist. camph. ʒj.

every second hour. Under the use of this the febrile symptoms subsided. During the night he was restless, and suffered a good deal from sickness, which was relieved by effervescing draughts.

Early on the morning of the 16th, he complained only of great weakness. Suddenly, in the forenoon, a little before twelve o'clock, a profuse damp perspiration broke out all over his body, followed immediately by convulsions. He was after this unable to speak. Slight convulsive twitchings of the extremities continued, and he gradually sank and died at a quarter past two P.M., of the 16th.*

EXAMINATION OF THE BODY three and a half hours after death. Externally nothing particular was observable, with the exception of the blotches on the different parts of the body, which had, from an *inky blue* colour, become *brownish*; and the discoloured state of the left leg, which had a *blueish* tinge extending up nearly to the knee. On examining the wound, a thin slough appeared to be separating, and there was a slight formation of matter round its edges, but no arterial branches could be traced into it. On cutting into the parts, there was slight extravasation of blood in the cellular substance around the wound.

Abdomen. The viscera were generally healthy; but the liver was rather large, particularly the right lobe, on the convex surface of which there was a mark of an old cicatrix, about two and a half inches long, and there was a red patch on its surface near to this place.

* A curved instrument, somewhat like a tenaculum, has been lately recommended for cauterising the punctures; following up their track, and effectually destroying the bitten tissue.

* It may be surmised that the treatment pursued subsequently to the exhibition of depressing astringents proved too active for a system labouring under the sedative influence of a virulent poison. The latter part of the treatment was, however, judicious; and in such cases little room is left for critical remarks, from their all but universal fatality. R. H. P.