

## **The climatic treatment of phthisis / by Harold Williams.**

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OF  
PHTHISIS.

BY  
HAROLD WILLIAMS, M.D.,  
OF BOSTON.

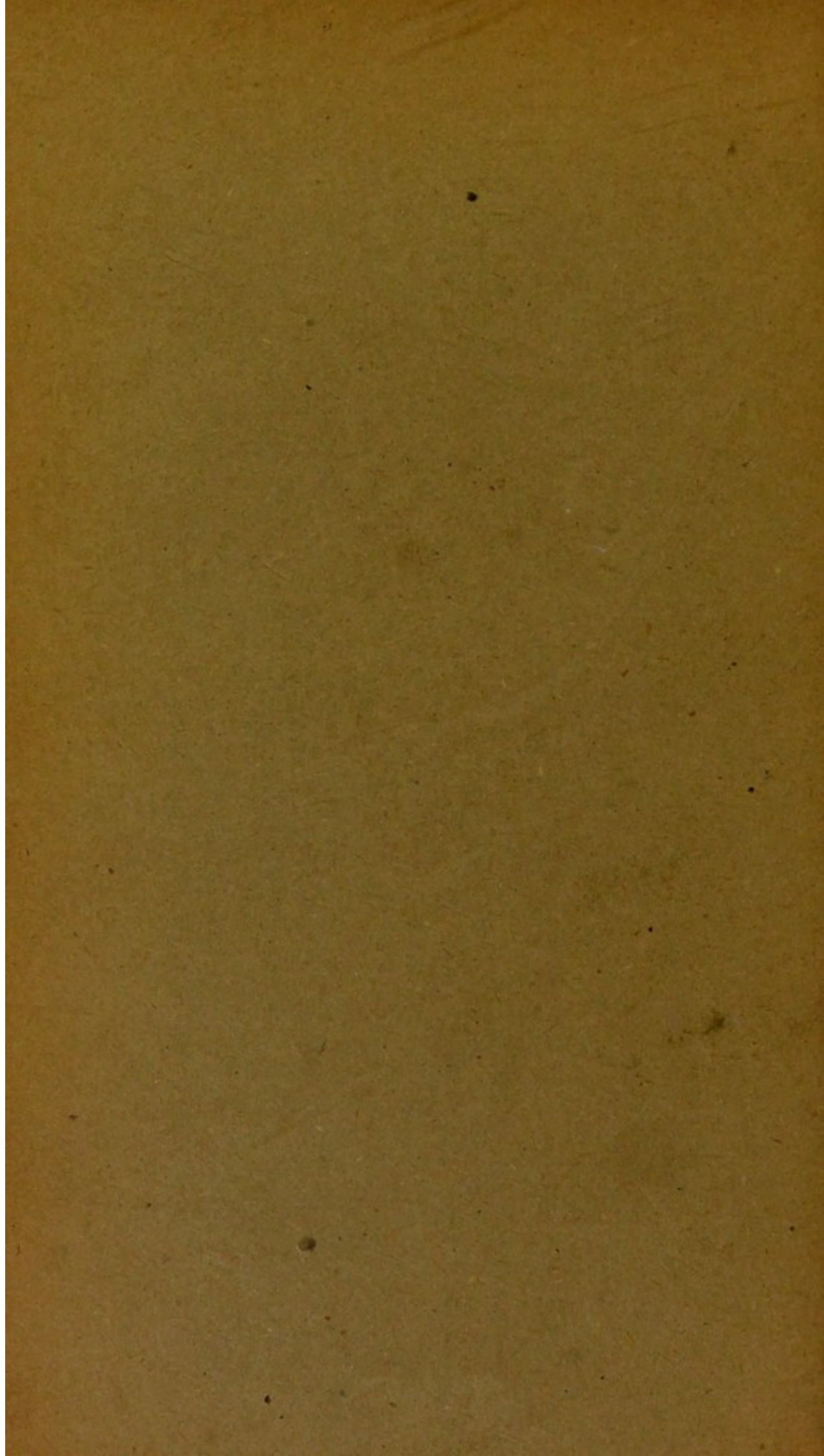
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## THE CLIMATIC TREATMENT OF PHTHISIS.

BY HAROLD WILLIAMS, M.D.

DURING the past thirty years, a gradual change of opinion has come about amongst medical men in the prognosis of pulmonary phthisis—a change which is due to the advancement of medical knowledge; *first*, with respect to the diagnosis of the disease, and *second*, with respect to its treatment; the former, since by an earlier recognition we are enabled to make an earlier application of our treatment; the latter, because of the improvement in that treatment.

The treatment thus applied, may, for convenience, be divided into the medicinal, general and local; the hygienic and the climatic; and when recovery results, exactly how much is to be ascribed to medicine *per se*; how much to a careful regulation of the hygiene of the patient; or how much is due to climatic treatment, if the climate cure should happen to have been applied, it is impossible to conclude, though in passing I would say, that in my own opinion, a due regulation of the hygiene of the patient is of more value than all other methods of treatment combined, medicine and climate simply being regarded as useful *adjuvants* to the hygienic treatment.

These brief preliminary remarks, therefore, bring us to the subject of our paper, "The Climatic Treatment of Phthisis," one of the most perplexing questions in the treatment of disease. It has been considered meteorologically, physiologically and illogically, clinically, empirically, and sentimentally. It is governed by no fixed laws; it is elucidated by few published clinical observations, and it is complicated by the utmost con-



flict of testimony and opinion, as any one may speedily convince himself by a few hours' perusal of the testimony in favor of the different health resorts.

In the mass of literature which the reader will then find before him, he will see that stations, possessing all the extremes of different climates, are alike recommended by their respective advocates; and the conclusion is forced upon the investigator, either that these advocates are prejudiced in their views, or that it must be to some common quality or qualities that all these localities are alike indebted for their vaunted reputations.

I shall not attempt to enumerate these health resorts, for their name is legion; let me simply content myself with saying that I have in my possession a list of one hundred and sixty-eight different island districts and towns, all of which are alike recommended for the treatment of pulmonary phthisis — localities which present every phase of difference in therapeutic climate, and I shall leave it to each one of you to infer the difficulty of deciding the question — “Where shall I send my phthisical patient?” But before we come to an analysis of those different factors which combine together to make up climate, I desire to call your attention to two facts which have hitherto escaped notice in the present context, as directly bearing upon the present question, the idiosyncrasies of certain persons for or against the sea or mountains being disregarded for the present.

The first of these facts is, that with or without treatment, certain cases of phthisis naturally tend to recovery, in proof of which I cite the cicatrized lungs of persons dying from other diseases as found in the autopsy room; also those cases familiar to each one of us in practice, of recovery from those physical signs which we are accustomed to associate with phthisis — of recovery, too, which often occurs under the most unfavorable circumstances. I, myself, can recall the case of a



man with well-marked signs at the apex of one lung following upon copious hæmoptysis, who was completely restored to health while living in one of the most crowded and unhealthful localities in this city, and I am sure I need not remind you of the two cases reported by Dr. E. G. Cutler<sup>1</sup> in a recent number of the *Boston Medical and Surgical Journal*.

This rule, that certain cases of phthisis tend to recovery, I think may be regarded as an axiom; and the same holds good of its converse, that certain cases of phthisis tend to progressive advancement in spite of all that treatment can accomplish to the contrary. To express this more plainly, I may say that some cases will inevitably recover, while others will as inevitably die, notwithstanding the treatment which may be applied to them, so that recovery or death in any given case should not be ascribed to climate alone, in disregard of other factors.

The second consideration which I would urge upon you, is the importance *per se* of *any* change of climate; a change which is often accompanied by a change of scene, of habits, of exercise, of food, of dress, of thought, of companionship and of surroundings; such changes are generally pleasurable changes, and "states of pleasure are concomitant with an increase of some or all the vital functions." In my opinion, much of the gain which is derived from a change of climate, is due not so much to the curative properties of that *climate* as may be attributed to the effect of the *change*.

But in spite of these facts, that some cases tend to recovery while others as necessarily tend to decline, and that the mere change of residence is valuable in itself, yet this does not preclude the possibility that a given change of residence may be better than another; that some classes of health resorts may be more efficacious than others, and for other reasons in addition to

<sup>1</sup> Boston Medical and Surgical Journal, March 26, 1885, p. 295.



that change ; and it therefore becomes our duty to examine the evidence which is adduced in support of these different groups of health resorts.

In a general way, these health resorts may be divided into four principal divisions ; the sea itself, island and sea-board stations, inland stations, and mountain stations ; and it may be said that the sea air, by which I mean the air of the sea as experienced upon shipboard, and mountain air as experienced at an elevation of 6,000 feet, represent the extremes of therapeutic climate. Between these extremes, the inland stations like Aiken and the Adirondack region ; and the island and sea-board stations, like the Bermudas and St. Augustine, lie, each possessing in a degree, the peculiarities of the extreme to which it is most closely allied.

Besides the common attributes of sunshine, winds, rains, etc., varying with the different local circumstances of each place, the meteorological peculiarities of these extremes may be summarized as follows :

Sea-air differs from the other groups in that it contains :—

*First.* The maximum amount of oxygen and the highest degree of atmospheric pressure.

*Second.* It contains the maximum amount of aqueous vapor.

*Third.* It contains the maximum amount of ozone.

*Fourth.* It contains the minimum of organic impurities.

*Fifth.* It contains small quantities of saline particles, iodine and bromine.

*Sixth.* It presents more regular variations of barometric pressure.

*Seventh.* It presents the minimum diurnal variations of temperature.

Mountain air, on the contrary, contains :—

*First.* The minimum amount of oxygen and the



lowest degree of atmospheric pressure, both diminishing in direct ratio to the height above the sea.

*Second.* It contains the minimum amount of aqueous vapor.

*Third.* It contains an excess of ozone.

*Fourth.* It contains a diminished amount of organic impurities.

*Fifth.* It presents great and irregular variations of barometric pressure.

*Sixth.* It presents the maximum diurnal variations of temperature.

*Seventh.* It is lower in temperature.

*Eighth.* It is characterized by greater "diathermancy" of the air, since by diminished density and humidity, it offers less obstruction to the passage of the sun's rays.

Some of these distinctions are, of course variable, though nearly enough exact for purposes of comparison, the only inaccuracy being in the local surroundings of the individual stations. For example, if we have a mountain resort in a valley, like Davos Platz, crowded by consumptives and badly drained, the air of that resort would probably contain much of those organic impurities most to be dreaded. Furthermore, the position of a locality with respect to neighboring heights, soil, direction and character of winds, latitude, and neighboring bodies of water, must, in a measure, modify some of these general rules.

Now these meteorological differences, although at first sight appearing of radical physiological importance, are in truth of little value in the treatment of phthisis, so far at least, as is demonstrated by our present knowledge. On the contrary it is probably due to qualities common to all groups that all are indebted for their reputations, as a brief review of these considerations will show us.

*First,* as regards the increased quantity of oxygen at



the sea level and the converse diminution at altitudes, it has been shown by Dr. Parkes that so long as the oxygen does not sink below fourteen per cent, as much is absorbed as when it is in its natural proportion,<sup>2</sup> a fact which would vitiate alike all theories based upon an increase or decrease of the oxygen in the atmosphere, since in none of the climates recommended for the treatment of phthisis does the oxygen sink below fourteen per cent. With regard to the consideration of the difference of barometric pressure, however, more attention must be paid, though like the variation in the quantity of oxygen, it seems to me of little practical importance. That an immediate change from a low to a high level is often a dangerous experiment for a person suffering from phthisis no one can deny, although I believe that the effects of such changes with respect to therapeutic heights have been greatly exaggerated. But be this as it may, the effects of sudden and extreme changes are not our present consideration. We are speaking now not of sudden deleterious changes, but of permanent favorable changes, slowly accomplished.

As none of the advocates of low levels urge the consideration of increased pressure, I shall confine my attention solely to the effects of diminished pressure, since it is largely upon this meteorological consideration that the advocates of high altitudes base their claims.

The nearest approach to a theory, that I have been able to find, as to the effect of diminished pressure upon phthisical patients, is that advanced by Dr. Denison, which I quote as follows:—

“With the atmosphere, let us say, one-fifth rarified, respiration is deeper and more frequent. Here the density of the air in the lungs during inspiration would seem to be lessened in proportion to the greater quan-

<sup>2</sup> Parkes' *Practical Hygiene*, 1883. Sixth ed., p. 429.



tity of air which has to be breathed. This increased approach to a state of vacuum in the lungs tends to draw the blood quickly into the pulmonary vessels which movement of the circulating fluid is aided by the accompanying increased action of the heart."<sup>3</sup> This increased capillary circulation in the lungs acts, Denison claims, in two distinct ways: first, by being in "opposition to stasis of blood which is an early stage of inflammation," and second, that by the pressure these expanded vessels exert upon the intercellular tissue, they crowd outwards the products of inflammation.

Now this theory seems to me untenable both in its data and its conclusions. In the first place it assumes that respirations are increased in force and frequency at therapeutic altitudes, whereas upon this point there is conflict of testimony, Jourdanet<sup>4</sup> asserting that respirations are lessened, while Coindet maintains that they are increased, thus showing that the question of increased respiration has still to be settled. But even supposing the respirations are increased both in force and frequency, such increase would seem, not to *lessen* the density of the air breathed, thus causing a vacuum in the lungs, but, on the contrary, it would seem rather to *increase* the density of the contained air. For the greater the quantity of air in the lungs, the greater would be the distension of the elastic chest walls, and consequently the greater the pressure exerted upon the air contained, thus increasing its density. So that if we admit that the respirations are increased this increase should be regarded as the probable factor by which the organism accommodates itself to diminished atmospheric pressure rather than as a means of causing a vacuum, as Dr. Denison claims in support of his theory. Moreover, Dr. Denison claims that this increased pulmonary circulation is also supplemented by increased

<sup>3</sup> Rocky Mountain Health Resorts, 1880, page 92.

<sup>4</sup> The Alpine Winter Cure, Wise, pp. 27-28.



action of the heart, whereas Jaccoud says that the acceleration of the cardiac pulsation is only temporary and ceases at the end of a few days.<sup>5</sup> But for purposes of argument, admitting that the air in the lungs *does* approach a state of vacuum, Dr. Denison has yet to show the advantage of this state, even provided that it did increase capillary circulation. For to say that "stasis of blood is an early stage of inflammation," is but a partial statement of the case, while to claim that the pressure of the dilated vessels upon the intercellular tissue crowds out the products of inflammation is purely conjectural, and a simple statement of what he desires to prove. Without stronger evidence than that afforded by this theory alone in favor of diminished pressure, therefore, it seems to me that we are not justified in sending our patients to the mountains.

Or again, in speaking of the doctrine of immunity from phthisis, which I shall allude to later on. Dr. J. Schraber in his address before the Vienna Meteorological Society, translated by Dr. Geddings of Aiken, says: — "that the altitude at which this immunity commenced, varied with the latitude, being higher the nearer we approach the equator," a fact which would seem to demolish the theory of diminished pressure alone, as an agent of value in the treatment of phthisis. Moreover, when we consider that artificially increased pressure is a method of treatment at present in vogue (Waldenburg's method), as well as is diminished pressure (high altitudes), it seems to me that we must admit that the effects of pressure upon phthisical patients are by no means clearly understood.

With regard to the effects of a difference in quantity of the aqueous vapor in the atmosphere, the advocates of high altitudes have much to say, while the advocates of the sea say little. Of the former, all assert their belief in the importance of dryness of the

<sup>5</sup> Pulmonary Phthisis, Jaccoud, page 291.



air although none have given sufficient reasons for upholding that belief.

Here it must be understood that we are dealing with the question: "Does an extreme dryness of the air exert a more favorable curative influence upon the phthisical than does extreme moisture?" and not with that greater question of the development of phthisis because of soil-moisture. We must remember, that, notwithstanding how great the effect may be that soil-moisture exerts upon the development of phthisis,—an effect which is probably due to the fact that the exhalations of damp ground are inconsistent with hygienic perfection, and to its affording a suitable soil for the development of germs,—that the question now before us, is of the effects of dryness or humidity of the air upon the disease, already established, upon which subject the physiological evidence is again vague and conflicting.

For example, the statement, "The watery vapor abstracting an undue amount of heat from the respiratory track and giving rise to catarrhs, coughs, or perhaps inflammation" <sup>6</sup> is met by the assertion, "Freedom from colds because of humidity." <sup>7</sup> Or again the statement, "the natural consequence of this dryness (of the air) is the abstraction of so much water from the respiratory tube that the lungs are *proportionately colder*, the consequence of which may be that some antipyretic effect is produced" <sup>8</sup> is met by the experiments of Beneka who has shown that heat is lost more readily at the north sea than at high altitudes <sup>9</sup> all of which go to show the unsettled state of the medical mind upon the effects of humidity. How the importance of aqueous vapor as a factor in the cure of phthisis should have gained ground I do not know. I can

<sup>6</sup> Wise, op. cit., page 20.

<sup>7</sup> Yeo's Health Resorts.

<sup>8</sup> Jaccoud, op. cit, 341.

<sup>9</sup> Deutsches archiv. fur klin med., March, 1874.



simply say that I know of no evidence proving that importance.

*Fourth.* With respect to ozone and "its effect upon man, little is known."<sup>10</sup> A fact of considerable importance, when we reflect that patients are daily sent to the Adirondacks, to Aiken, and to the New Jersey and Georgia pines because of the increase of ozone which is said to follow in consequence of the turpentine exhaled from the trees.<sup>11</sup> In this context I would say that those who rely upon this theory repose their faith upon broken reeds, since, not only is it claimed by Brown "that ozone is nearly or quite inoperative<sup>12</sup> in the curability of disease, but also since it is known that turpentine has the peculiar property of preventing the further formation of ozone.<sup>13</sup> In regard to this question of atmospheric electricity a curious claim has been advanced by Denison, who says:<sup>14</sup> — "You lie down to sleep on the ground as only a tired camper can, and rise in the morning from your *negative electric* bed, to stretch yourself in the *positive electric* air." As the "positive electric air" is caressing the "tired camper" quite as much while he is sleeping as when he is stretching (unless he should have covered up his head with his blanket), I conclude that it is the stretching which Dr. Denison intends to inform us is of use, though why an invalid need go to Colorado, in order to stretch himself in the open air is not so evident.

*Fifth.* Sea-air contains a small quantity of saline particles of iodine and bromide, which, says Yeo,<sup>15</sup> "may not be without real influence on some organisms."

*Sixth.* Mountain air presents less regular variations of barometric pressure, and an increased diathermancy.

<sup>10</sup> Tripe. Tr. of the Soc. Med. Off Health, 1882-83, p. 20.

<sup>11</sup> Practical Medicine, Loomis, page 204.

<sup>12</sup> Brown, Tr. Rh. Ist. in. Soc. 1880.

<sup>13</sup> Brown, op. cit. also Enc. Brit. vol. xviii, p. 113.

<sup>14</sup> Denison, op. cit., p. 75.

<sup>15</sup> Health Resorts.



Upon these points of difference nothing is proved: of the former, it is claimed, that variations of barometric pressure exert considerable influence on the circulation of the air contained in the soil — the so-called ground-air — an air which is likely to be contaminated with carbonic acid, marsh gas and occasionally sulphuretted hydrogen;<sup>16</sup> and of the latter, it is claimed by Denison<sup>17</sup> that since mines are unhealthy because of the absence of sunshine, and since the power of the sunshine increases with increasing altitude, therefore “*the beneficial effects of sunshine increase with increasing altitudes.*” Denison’s syllogism disregards latitude, and if true, would go to show that Colorado was less suited for consumptives than all points between it and the equator if of equal altitude, since the altitude being the same the effects of the sun’s rays must be increased as we approach the equator, as is shown by the increasing altitude of the snow-line.

*Seventh.* The sea air presents the minimum of diurnal variation of temperature; a factor which seems to me greatly in favor of the sea, inasmuch as the important effect upon health of sudden and great changes of temperature by promoting or checking perspiration is generally admitted. Moreover, it must be borne in mind, that these changes, however great they may appear with us, are still greater in many of the mountain stations and less upon the sea itself. The annual range at Fort Sully, for example, is 150° F.,<sup>18</sup> whereas in the Eastern or Atlantic States it is 106°. Again, the range at Denver for the month of March, 1880, was 83°,<sup>19</sup> whereas in Santa Barbara, the maximum variation for the month of January, 1879, was 29° F.,<sup>20</sup> while again, according to the report of the Challenger,

<sup>16</sup> Tripe, op. cit.

<sup>17</sup> Denison, op. cit., page 22.

<sup>18</sup> Rattray Phil. Med. Times, 1880-81, xi, p. 358.

<sup>19</sup> Fiske, N. Y. M. Record, 1884, xxvi, p. 526.

<sup>20</sup> Nelson, The Planet, N. Y., 1883-84, p. 135.



the diurnal range of the temperature of the air over the North Atlantic on a mean of 126 days was  $3^{\circ} 21'$ ,<sup>21</sup> figures which are taken from the data at hand, simply to show the variations of temperature. And in this context I would say that such tables of temperature as are usually given are of little practical value in the selection of a health resort. It is the *diurnal range* that we wish to know, and in such reports the diurnal range is carefully avoided.

*Eighth.* Mountain air is lower in temperature, a factor which again seems to me in favor of the sea, since the coldness of the mountains is opposed to the principles of hygiene in so far as it admits of less open air exercise and prevents a suitable ventilation of the houses; the evil effects of which latter are augmented by the herding together of consumptive patients in hot, ill-ventilated rooms during the major portion of the twenty-four hours. I know of no better illustration of this than is afforded by Hassall, who writes: "Few invalids, who go to Davoz . . . spend more than four or five hours in the open air. . . . In his rooms, he breathes the rarified air, heated by stoves, rendered impure by the number of persons congregated together in a small space, all breathing the same air."<sup>22</sup>

*Ninth.* Both sea, and to a slightly less degree, mountain air, contain the minimum amount of organic impurity; the sea, because there exists no source of origin, the mountains, because of the paucity of population; the lowness of temperature, the presence of snow and the prevalence of winds.

Thus, then, to sum up the meteorological differences between the air of the mountains and the air of the sea, it would seem that the sea air possesses certain possible advantages over that of the mountains in that it is warmer and purer, and that it presents slighter

<sup>21</sup> Enc. Brit. Vol. xvi, p. 117.

<sup>22</sup> Hassall, Lond. Lancet, 1879, ii, p. 152.



variations both of temperature and humidity.<sup>23</sup> But this it must be remembered, is the air over the sea itself, air that can only be prescribed through the medium of ocean voyages, a prescription open to the grave objections of idiosyncrasy against the sea; sea-sickness; anxiety at leaving friends, fears of dangers, lack of companionship, variety and exercise; and above all, inferiority of food. Added to which is the difficulty of selecting a voyage which shall extend over a sufficiently long period of time. Thus, though it would appear that the sea-air is theoretically somewhat better than other climates for such consumptives as can avail themselves of it, we cannot but recognize, in view of these ulterior considerations, that it is available but for few.

Island and sea-board stations resemble most nearly the sea; differing from it both with respect to variations of temperature and humidity, and purity of the air; the latter being probably dependent upon the density of population, the age of settlement, the character of the soil, and the prevalence and direction of winds. Inland stations, on the other hand, resemble the mountains or the sea according to their altitudes and consequent humidity and diurnal and annual ranges.

Physiologically speaking, therefore, it may be said that mountain air is no better than island or sea-board air because it is colder and more liable to sudden and excessive changes of temperature, while, on the other hand, it may be contended that island or sea-board air is no better than mountain air because of its diminished purity; the factors of difference in each class thus becoming, in a comparison, factors of equalization. And in this context I would allude to the idiosyncracies of individual patients for or against the sea or mountains. I think there can be no doubt that some people feel better at the sea than at the mountains, or *vice versa*,

<sup>23</sup> The Ocean as a Health Resort. Wilson, p. 234.



in the same way that they manifest a different tolerance of drugs, and I believe that these individual preferences should be consulted in the successful treatment of phthisis by climate, although no definite rule can be laid down with this respect unless it should be that in general people above the middle age do better at the sea.<sup>24</sup>

Clinically considered, I again find the evidence vague and incomplete. I am aware of but three statistical reports of any value in favor of the high altitude treatment; those of Spengler,<sup>25</sup> concerning cases at Davoz Platz, 5100 feet above the sea; those of Denison,<sup>26</sup> of cases occurring in Colorado, Wyoming, and New Mexico, and those of Ch. K. Williams,<sup>27</sup> also of cases at Davoz. Of the island, seaboard, and inland resorts I can find no statistical report whatever of completeness. From the reports of mountain treatment no conclusion can be drawn.

In Spengler's statistics of 323 cases, 73 recovered or about one-fourth, as compared with the one-sixth of recoveries cited by Loomis<sup>28</sup> as the result of mixed treatment. Yet we are informed by Ch. K. Williams that among the patients at Davoz "there is a limited amount of disease (and that too in an incipient form.)"<sup>29</sup> From this it would appear that a large number of Spengler's cases were of incipient phthisis, or selected cases, and from such material it is evident that no conclusion can fairly be deduced. 190 of the 323 are claimed to have been improved, but temporary improvement belongs to the natural history of phthisis, as is well known to every practitioner of medicine. Above all, Spengler's observations were made during one and a half years, a period of time far too short to

<sup>24</sup> Loomis, *op. cit.* p. 205.

<sup>25</sup> Peters, *Edinb. No. p.*, 1880-81, xxvi, p. 1100.

<sup>26</sup> Denison, *op. cit.*

<sup>27</sup> *Lond. Lancet*, 1879, ii. 191-233.

<sup>28</sup> Loomis, *op. cit.* p. 197

<sup>29</sup> Williams, *Lond. Lancet*, *op. cit.*



enable us to arrive at valid conclusions. Denison's statistics consist of 260 records, 58 of which are excluded, 34 for reasons which seem to me insufficient. Of the 202 remaining cases, the observations extended only over an average period of one and three-fourth years, thus representing "an analysis of 350 years, spent by 202 consumptives in Colorado," as Denison more attractively puts it. But actual results are not given. Dr. Denison merely speaks of improvement, and temporary improvement, as I have said, belongs to the natural history of the disease. Moreover, improvement is often exaggerated, especially when recorded by so enthusiastic a partisan as Dr. Denison. Williams' statistics present similar objections. The illogical argument in favor of certain localities may be briefly stated as follows: In the locality A phthisis is unknown, therefore the locality A offers the greatest hope of recovery for persons suffering from phthisis. Such an argument is of course absurd, especially in view of the present light thrown upon the cause of the disease by Koch in his renowned discovery. We do not argue that because typhoid fever is unknown in a certain town, that town is especially adapted for the treatment of cases of typhoid, and should we so argue I think it would be safe to infer that this town would not enjoy its reputation for any considerable period of time. Moreover, to say that it is because of the climate alone, that the inhabitants of a certain Swiss hamlet enjoy their immunity from phthisis, is illogical in the extreme. Who can say that such immunity is not due to the rugged habits of the mountaineers? to their hygienic, active open-air lives? Or how are we to reconcile such a doctrine with the statement of Parkes<sup>30</sup> that in the Swiss Alps while phthisis is rare among the men who live in the open air, yet it is very prevalent among the women, who, "employed in mak-

<sup>30</sup> Practical Hygiene, p. 429.



ing embroidery, congregate all day in small, ill-ventilated low rooms?" I, for my part, have no more doubt that it is the open-air life and not the climate, that has granted this immunity to the men than I have that it is the sedentary occupation and impure air *and not the climate* which has proved so destructive to the women. Moreover, upon this subject of immunity the greatest contradiction of statement prevails. For example, the statement, "the exceeding fatality of consumption, etc.,"<sup>31</sup> in Florida, is answered by the counter assertion that Florida at the time of writing had no "State Board of Health and no registration of deaths outside of the city of Jacksonville,"<sup>32</sup> showing that any statement in regard to the prevalence of consumption in Florida, at that time, must have been purely conjectural; and again, "The investigations of Hirsch have shown that neither the geographical position nor the temperature have anything to do with the prevalence of consumption . . . which is very common . . . in Siberia,"<sup>33</sup> while on the fifty-ninth page of Denison's book we find on the contrary the assertion: "In Siberia phthisis is very rare."<sup>34</sup>

Another form of the illogical argument at present in vogue is: That A. recovered in —ton, therefore we should send B. to —ton. Yet this argument might be as correctly stated by saying: "C. died in —ton, therefore we should *not* send B. to —ton.

The sentimental aspect of the question demands but little notice at our hands. It is hardly necessary for me to call attention of members of this Society to the physiological effects of the perfumed zephyrs, or the health-giving breezes which figure so largely in the descriptions of health resorts found in our medical journals. I have simply alluded to the subject in order to

<sup>31</sup> Dr. Talbot Jones, N. Y. M. J., Sept., 1879.

<sup>32</sup> C. F. Kenworthy, N. Y. M. J., Oct. and Nov., 1880.

<sup>33</sup> Ziemssen's Archiv., Vol. v, p. 490.

<sup>34</sup> Denison, op. cit., p. 59.



remind you that sentiment is not science, and consequently should be shunned while dealing with questions of scientific importance.

Thus, then, to sum up, it seems to me we must admit that at the present state of our knowledge the meteorological differences of climate have been proved to be of little importance in the treatment of phthisis; and furthermore, it seems to me that clinical evidence would support this conclusion; for the burden of proof lies with those advocates who plead in favor of special climates, and such proof, it seems to me, is yet to be forthcoming.

But the beneficial effects of a change of climate in the treatment of phthisis is a matter of common belief if not of statistical proof, and such beneficial effects I believe to be due to factors common to all groups of health resorts, varying only in degree. These factors are: The change itself; the purity of the air;<sup>35</sup> the increased number of hours of open air exercise permitted;<sup>36</sup> and the improved hygienic surroundings of the patient; and this belief I shall hold until better evidence is adduced in favor of any of the four groups of health resorts. But before closing, I would say that if these three groups of health stations (sea voyages, the best being now disregarded) are admitted to be similar, yet individually these places are not to be regarded as equal; the superiority which one exercises over another being that it affords greater hygienic advantages.

An ideal health resort for this disease should be sparsely and newly settled.<sup>37</sup> It should possess a pure water-supply and adequate drainage. It should be of a dry and porous soil and should be favorably situated

<sup>35</sup> Fayrer., *Med. Soc., Lond.* *Lond. Lancet*, 1883, i, 595.

<sup>36</sup> Parkes, *op. cit.*

<sup>37</sup> And it is with density of population that phthisis has become endemic. Bancroft, *Am. Med. Biweekly*, Jan. 4, 1879.



with respect to neighboring heights and marshes and prevailing winds. It should be equable in temperature, and should possess the maximum of pleasant weather. It should not be so hot as to be enervating, nor so cold as to prevent out-door exercise and proper ventilation of the houses. It should afford plenty of amusement; it should not be crowded with consumptives, and it should be sufficiently unfashionable as to admit of hygienic dress.

Above all, it should afford suitable accommodations for the invalid. The house should be carefully situated and thoroughly ventilated; the food should be abundant, palatable, and varied; and the sleeping-room should be large and sunny, and afford sufficient ventilation, and I believe that such a health resort as affords these advantages in the highest degree will be found by experience to be the best locality for a phthisical patient, be the barometric pressure, the aqueous vapor, and "the diathermancy" what they may.

In conclusion, I would say that the views arrived at in the present paper are by no means new, although they have not to my knowledge been similarly stated. For example, Parkes, in his *Practical Hygiene* has said: "The best climates for phthisis are those which permit the greatest number of hours to be passed out of the house,"<sup>38</sup> and again, Sir Joseph Fayrer, President of the London Medical Society, expressed a similar opinion when he said that: "too much importance had been attached to altitude; it was pure air that is of most value."<sup>39</sup> For myself, I believe that more attention has been paid to the meteorological differences of climate than their efficacy has been shown to deserve and that too, to the great detriment of such patients as are unable to avail themselves of them,

<sup>38</sup> Parkes' *Practical Hygiene*, quoted in *B. M. & S. J.*, 1883, xviii, 282.

<sup>39</sup> *Med. Soc. Lond. Lond. Lancet*, 1883, i. 595.



since, as they cannot be sent to such places as their physicians regard most valuable, they are not sent away at all. To such persons I believe that a consideration of what I have said, must prove of real value. Some changes of climate is possible for all — even the artisan or the laborer can pursue his calling in the country as well as in the city, or upon the sea-board as well as in the interior.





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