THE CROONIAN LECTURES ON THE HYGIENIC AND CLIMATIC TREAT- MENT OF CHRONIC PULMONARY PHTHISIS.

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LECTURE III.

(Concluded from page 690.)

Climates; Purity of Air the most important Element; Floating Matters; Climatic of Elevated Regions; Objections Met; General Characters; Physiological and Therapeutical Actions; Swiss Alps; Peruvian Andes; Rocky Mountains; South African Highlands; Home Climates.

AFTER having discussed the general characters and influence of the climates of elevated regions, I must limit myself to a few remarks only on the principal health-resorts, as time compels me to do so, and as there already exist numerous descriptions in the English language, by professional and non-professional authors. I need not tell you that the difference between the different localities included in this class of climates is very great, and is only yet partially known and appreciated; that even in the same Alpine valley, and in the same place, there are great differences between different situations; and that the climate of the same place is by no means uniform in different years.

We naturally begin with the Swiss Alps, as they are nearest to us; and with *Davos Platz*, about 5,100 feet above the sea-level, as it was the first place resorted to, just twenty years ago, when two patients migrated there from Gorbisdorf—Dr. Unger and Mr. Richter—who there regained their health, and are still living at Davos, in active occupation. They were encouraged to give a prolonged trial to the place by Dr. Spengler, who had already written on the absence of scrofula and phthisis in the Davos valley. As I had been on the look out for a suitable place in the Alps for some years previously, in consequence of some encouraging experiences which, I might say, accident had thrown in my way, I soon afterwards began to send patients there. When I first directed attention to Davos Platz, in 1867, it was still a charming primitive Swiss village; now, numerous large and small hotels and villas stretch along the high road for more than a mile; and Davos Dörfl, a little higher up in the valley, may almost be considered as a suburb of Davos Platz. Waters, Spengler, Frankland, Unger, Clifford Allbutt, Addington Symonds, C. T. Williams, Burney Yeo, Peters, Marcet, Otter, Jaccoud, Sée, Symes Thompson, and others, have amply described the peculiarities of Davos. The presence of good physicians; the more and more improving arrangements in the hotels, including sunny terraces and verandahs; the means of varied exercise and amusement; the comparative nearness to the railway; a good road thence (from Landquart or Chur) to Davos, without an intervening high pass, are accessory, though very important to the general climatic characters of Davos Platz and Dörfl. A drawback is, that its reputation has of late years increased so rapidly that too many (frequently ill suited) cases are sent to Davos; that the number and size of the hotels and health-establishments increase at an alarming rate, so that there is actual danger that Davos may be ruined by its own original advantages; for purity or aseptic quality of the air is incompatible with the crowding together of a large number of invalids. Mr. J. Addington Symonds, the author of *Davos in Winter*, has written on this subject in the *Pall Mall Gazette* of January 14th, 1882; and I have likewise already mentioned this matter in a paper on Climate and Health-Resorts in the *Book of Health*. If Davos were to be ruined, the calamity would not be confined to the inhabitants of the valley, but would be shared by many invalids all over Europe.

Lower down in the Davos valley, at Davos Frauenkirch, a small hotel offers fair accommodation to a limited number of invalids; and further down, but high above the bottom of the valley of the Landwasser, on the sunny southern slope of the Rothhornstock, lies Wiesen, about 4,770 feet, of which Dr. Tucker Wise has given an

attractive description. It is well sheltered from north and north-east, but is rather more exposed to south-west wind than Davos; and the snow does not lie quite so long. The hotels and the social attractions are not so advanced as those at Davos, but the stay is less expensive, and under the guidance of Dr. Buol, an intelligent Swiss doctor, who is a licentiate of the College of Physicians of London, good results can be obtained in suitable cases, even with limited arrangements.

The Upper Engadine is a fair rival to the valley of Davos; and the village of *St. Moritz*, about 6,000 feet above sea-level, and 280 above the lake, with the well known Kulm Hotel, and the houses of Kaspar Badrutt, represents the Davos Platz of the neighbouring valley. *St. Moritz* has been so well described by Dr. Burney Yeo, Mr. Lionel Tollemache, Dr. Ludwig, Biermann, and many others, that I can confine myself to a very few remarks. Davos is somewhat more sheltered, and is slightly warmer than *St. Moritz*, and is nearer to the last railway station, for those coming direct from England or the north. *St. Moritz* lies 900 feet higher, has the advantage of the snow somewhat longer, has decidedly more wind, according to the observations of Mr. Waters, has a skating-rink, and a good lawn-tennis court, in the immediate neighbourhood of the hotel, and more opportunities for exercise. On the whole, Davos has some advantages for more serious invalids; *St. Moritz* for harder cases.

The best sites in the Upper Engadine would probably be found in the neighbourhood of Pontresina, on the south-western slopes of the Muraigl, or the Munt della Bescha; they would have the largest share of sunshine during the shortest days of the winter, would be in the immediate neighbourhood of pine and larch forests, and out of the way of the Maloja wind; but the hotel proprietors of Pontresina are as yet hostile to the scheme of a winter cure, fearing that their summer guests would leave them if they were to open that favourite spot for the treatment of phthisis. They are, apparently, strong contagionists. But there are sites, for instance, near Acla, about 6,000 feet above sea-level, to the right of the road from Pontresina to Samaden, over a mile from the former, where one or two health-establishments might be placed, without prejudice to the visitors of Pontresina.

Samaden has been, for many years, used by some consumptive patients as a winter resort, and the excellent fare and service at the Hotel Bernina make, to some degree, good what the absence of open and covered verandahs and balconies and terraces leave to be desired. Above Silvaplana and Campfer, on the southern slopes of the Piz d'Albana, and Piz Valaschin, good sites could be found. The establishment of the Kursaal Maloja is rather exposed to the wind, and not high enough above the upper end of the Lake of Sils to be perfectly free from damp and mist at all times of the year; but the Kursaal itself is dry, and the large corridors for indoor exercise, the arrangements for constant and abundant supply of warmed air to the rooms and passages, and the good *cuisine*, make atonement for some defects in the position. Dr. Tucker Wise, who is the resident medical officer, has given an encouraging description of these arrangements; and such improvements as sheltered outdoor seats and pavilions were in the course of erection when I was there on a visit during the autumn of 1884. Independently of permanent residence, the Maloja Hotel can do good service as a place of transition; for instance, during the melting of the snow, when outdoor exercise is difficult. A few weeks at this place will be a great advantage to visitors at *St. Moritz*, or even Davos, as they can walk for hours every day in well aired corridors without exposure to dampness or draught.

The localities mentioned, and Zuz in the Upper Engadine, are all the winter health-resorts in the High Alps which are open to us at present. There would be some satisfactory places in the Dolomites, as above Cortina, and perhaps Martino di Castrozza and Campiglio, but there are no arrangements for the winter as yet.

In a much lower situation, *St. Beatenberg*, above Lake Thun (3,766 feet), is quite sheltered from the north and east, and quite open to the south, and very sunny. It is only lately that the proprietor of the Kurhaus has commenced to keep the hotel open, and I can therefore not speak of the results. The Hotel des Avants, 3,212 feet above the sea-level, and 2,000 feet above the Lake of Geneva, has a very sunny situation, and is already out of the region of mists. The arrangements of the hotel are good, but the snow does not lie so long as at Davos and *St. Moritz*; and although preferable in many ways to the lower localities on the lake, it is not so bracing as the health-resorts in the Gîsons. Seewis (2,956 feet), above the road from Landquart to Davos, has a cheerful, sunny, and sheltered situation. Such localities will probably, by degrees, take an important place as intermediate health-resorts for intermediate cases; for such, to use an instance, in which the usefulness of higher localities is

doubtful, or in which they are certain to be unsuitable, where, however, a surrender to the low level places is undesirable, or as temporary places, namely, as steps to the higher health-resorts. Soowis, for instance, is well adapted as a stepping-stone to Davos and St. Moritz. In order, however, to become really useful, they must provide themselves with good resident medical men, as, without this, it would be wrong to entrust to them cases requiring special care.

I must now name two localities in Germany which deserve your attention, although I can mention them only in a cursory manner; these are Gorborsdorf, in Silesia, and Falkenstein, in the Taunus. Gorborsdorf, about 1,740 feet above sea-level, is the cradle of the mountain health-resorts, and of the hardening open-air treatment in Europe, with a judicious admixture of hydro-therapeutics. Dr. Hermann Brehmer has the merit of having introduced this combination in a systematic manner, coupled with the strict supervision of the patients, essential in the hygienic as well as in the therapeutic management. Brehmer's establishment lies in a beautiful park, with a pine-clad hill belonging to it, arranged for graduated climbing. The establishment is provided with covered walks of great length, and with a winter-garden suitably warmed and ventilated. Falkenstein, about 1,500 feet, has become, under the judicious as well as energetic guidance of Dr. Dettweiler, a health-resort where not only many invalids have been improved and cured, but where they have learned how to manage themselves afterwards. The results obtained at this establishment show how much can be done in phthisis by carefully arranged hygienic management, even with imperfect climatic elements.

During the last few years, several other establishments have been formed, which are likely to become useful, and to lead to further imitation. Aussee, in Styria (2,150 feet); St. Blasien (2,500 feet), in the Black Forest; Reiboldsgrün (2,257 feet), in the midst of a forest, near the railway station of Auerbach in Saxony; and Badenweiler (1,380 feet), in a beautiful position on the south-western slopes of the Black Forest, deserve to be specially mentioned.

In Norway, the Gausdal Sanatorium, about 3,000 feet above sea-level, and 2,500 feet above Lake Mjøsen, and 24 miles from Lillehammer, has been mentioned to me as a probable health-resort for consumptives.

More important to us, in the treatment of phthisis, are the health-resorts of America. In the Peruvian Andes and the Rocky Mountains of the United States, there is, indeed, an endless variety of mountain-climates. Near the equator, elevations of 6,000 and 8,000 feet have winter-temperatures similar to our summer-temperatures, and we must go still higher to find localities suitable to the treatment of phthisis. But at greater distances from the equator, we come, at elevations of about 6,000 or 7,000 feet, to climates somewhat similar to those in the Alps at about 5,000 or 6,000 feet. In the neighbourhood of Jauja and Huancayo, at elevations varying from 8,500 to 10,500 feet, several of my patients have recovered from rather advanced affections of phthisis; after I had learned the character of these climates, and had been encouraged in sending patients there by my late friend, Dr. Archibald Smith, of Lima, whose papers on these subjects are well known to you. How different, however, these climates are from the Swiss Alps, you may see from the following statement of Archibald Smith. "At Huancayo, 12° south latitude, and 75.12° west longitude, the annual range of temperature in the shade may be taken as ranging from 8° or 9° to 14° Reaumur; while at the cooler town of Jauja, with from 10,000 to 15,000 inhabitants, the range, during one whole year, has been observed not to exceed from 8° to 12° Reaumur, or from 50° to 59° or 60° Fahrenheit; with the sky always clear and sunny, and an atmosphere pure and bracing, which invites to outdoor exercise and enjoyment." From no other localities have I seen such good results as from Jauja; but also from Santa Fe de Bogota (about 10,000 feet), Quito (about 10,000 feet), La Paz (12,000 feet), Cuzco (11,250 feet), I have occasionally received good reports. Arequipa, in Peru, 16° south latitude, has lately been recommended by Dr. Dixon Hunter, with an equable temperature averaging about 65° summer and winter within the house, and outside in the shade during the day. I have no doubt that this climate is infinitely better than many others, especially the hotter regions along the sea-shore, and that consumption can be cured there; but it is somewhat too warm.

The Rocky Mountains, in the United States of America, have only been used as health-resorts in phthisis, so far as I know, during the last fifteen or sixteen years, and they seem to have met likewise at first with much opposition. At all events, about nine and ten years ago, the advice I have given to several American consumptive patients to settle at Denver or Colorado has been rather severely criticised by New York and Philadelphia physicians, especially in two cases of hæmoptöic tendency, and yet these patients did well when they afterwards carried

out the advice. Manitou Springs (6,315 feet), and Colorado Springs (5,775 feet), and Denver (about 5,000 feet), are the best known localities, and have been repeatedly described by Drs. Denison and Solly; but numerous other resorts of the future are mentioned in Dr. Denison's instructive work on *The Rocky Mountains Health-Resorts*.

Dr. Frankland has quite lately mentioned to me in this territory a locality which is likely to become an important health-resort, Yellowstone National Park, accessible by the Northern Pacific Railway. It is situated on the eastern slopes of the Rocky Mountains, between 44° and 45° N. lat. "The park abounds in magnificent geysers and boiling springs on a most gigantic scale, and there are plenty of mineral waters. The boiling water and steam might be made available for warming hotels, but there is also an abundance of wood-fuel. There is so much room in Yellowstone, that there need be no overcrowding as at Davos."

Mexico, too, possesses good health-resorts, about which the well known works of Jourdanet and Guilbert contain valuable information.

The South African altitudes have been described by Symes Thompson and the late Harry Leech, and by several non-professional writers—Trollope, E. F. Sandeman, and Otter. The most important health-resorts are contained in the Orange Free States, Griqualand West, and the Transvaal. Bloemfontein (4,700 feet) is the best known place, but many others would be equally suitable, as Christiania, Bloemshoff, Potchefstroom, Witwater Rand, Pretoria, Heidelberg, Utrecht, Standerton, and Wakkerstroom. Everywhere the climate is dry, and often in summer very hot, in winter cold. I have seen some good from these localities, but the promise of "the absolutely perfect cure" held out many years ago by some inhabitants of the Free States has not been fulfilled. Whenever we recommend these regions, we must bear in mind that a sea-journey and a long land-journey are implied. Those who are good sailors will not regret the former, and the latter can be rendered beneficial if the invalid be not too weak, and do not mind expense. The best mode to reach the high regions is still a well supplied ox-wagon from Graham's Town, or Wynberg. "Wagon-travelling with the traveller's own oxen," Mr. Otter justly says, "is very slow work, not averaging more than ten or twelve miles a day; but as such an expedition is only made for the sake of health, the rate of travelling is not material; and when once a traveller has got into a district which is suitable to him, he is in no hurry to get out of it."

Many of the great mountain chains of Asia contain, no doubt, useful health-resorts; but our dependable knowledge is almost confined to the Himalayas, which enclose, you may say, all varieties of climate, stretching along as they do for about 2,000 miles, with an average width of 180 miles, and elevations ranging from 1,000 to 23,000 feet. There are, besides, the Neilgherry range, the Pulneys, the Aravalli or Aravelli mountains, the Vindhya range, the Western and Eastern Ghats, and several other ranges. There are health-resorts varying from 4,000 to 8,000 feet in elevation. In considering these stations, we must always bear in mind the nearness of the equator; and further, that the peninsula is surrounded, excepting its broad base, by enormous masses of warm water. The periodical winds coming from these seas are saturated with vapour, which, on reaching the cooler mountain ranges, is partly deposited as rain. The emanations from the damp soil are probably laden with microbic life. The majority of the Indian hill-stations have, therefore, very different climatic conditions from those of the Peruvian Andes, the Rocky Mountains, and Swiss Alps. These circumstances may explain the contradictory views of Anglo-Indian medical men regarding the influence of their hill-stations on phthisis. The carefully drawn up report, however, of Dr. Kellett, on consumptive soldiers who spent six months (April to November) at the convalescent station of Landour, shows results which are not unsatisfactory. Very different must be the climates on the northern slopes of the Himalayas, for the atmosphere, before reaching them, has lost the greater part of its moisture, on the southern slopes, and highest ridges; these climates must therefore be drier and cooler; and very possibly Thibet (9,000 to 11,000 feet) and Cashmere (5,000 to 6,000 feet) contain most healthy climates.

I had intended to survey with you, gentlemen, the climates of Nubia and Egypt, of Algiers, Italy, Spain, the Riviera, and South-West of France; of Australia, and New Zealand; Madeira, Tenerife, and the high seas, in their applicability to the treatment of phthisis, but time fails; and I hope you will pardon me for having spent too much time over other matters, and you will not think that I regard the regions which I pass over as useless; they have been so often and so well described by others, (and I have likewise elsewhere given an account of them), that my present omission can scarcely be regretted.

Many of the localities included in these climates possess very useful

qualities for the treatment of phthisis, and especially for those conditions and constitutions which are either temporarily or permanently debarred from the benefits of the altitude climates; but I regret to say that, as yet, the arrangements are nowhere perfectly satisfactory. Even at the most favourite places, supplied with all the modern comforts, such as Cannes, and Mentone, and San Remo, the majority of invalids are in the habit of acting almost independently of their medical advisers, and many perish who, under strict guidance, might have been saved. The personal character and professional superiority of a Dr. Frank, or Bright, or Charles, or Siordet, or of one of the other physicians practising there, may in some, even in many cases, exercise so powerful an influence as to command willing obedience; but the whole system of this looseness of tie between medical man and consumptive patient is deplorable, and the results obtained are very inferior to those which might be obtained by judiciously arranged health-establishments, under strict medical guidance in every point of general and personal hygiene. This, however, is by many invalids not yet regarded as the principal sphere of the physician's work, but more or less as everybody's business, for which no medical man is required, and which each individual must find out for himself.

I also regret very much that I cannot properly discuss the climates of Great Britain and Ireland. These islands you know, contain, on the different coasts and in the interior of the land, a great variety of climates, which have been well described by Sir J. Clark, Thorowgood, C. T. Williams, Tripe, Buchan, and others, and I have likewise given short sketches of them. With all the differences, great as they are, between east and west, south-east and south-west coasts, and the different inland localities, there are certain traits of character more or less common to all of them, namely, a high degree of humidity; greater warmth than is due to the geographical latitude; comparative equability with regard to seasons and periods of the day; an analogous degree of sunlessness and dullness of atmosphere; and considerable movement of the air, almost amounting to windiness. All these localities, as a set off, possess hygienic arrangements which are superior to anything which is to be met with abroad, good food, and good accommodation; they are of easy access, and do not require a complete separation of the invalid from his family.

The physiological influence on the constitution compared with foreign localities of a similar elevation, may be designated as more or less tonic and health-giving, though not exhilarating, and as requiring a certain degree of energy and integrity of constitution. We possess in these islands good climates for preventive treatment, but we are not so well provided with localities assisting the treatment of developed phthisis, where the lungs and the constitution have partially lost their integrity and energy.

We ought, therefore, to do everything to mend the defects of these our climates, and to render the good qualities available, and concentrate them if possible. Is this done at our health-resorts for the treatment of phthisis? No, gentlemen, there are no such arrangements, or almost none, at the coasts of Devonshire, Hants, Sussex, and even the Isle of Wight, excepting the few sanatoria. Let us use our influence with our local professional brethren, who are neither deficient in knowledge nor in insight, and with the local proprietors and public, to obtain well placed and well arranged houses for the invalids, with suitable balconies, on which light couches and shelters for open-air treatment can be placed; good large verandahs, with movable glass doors; open and covered walks and winter-gardens, for exercise in windy and rainy weather; seats of different nature, with turnable shelter; quadripartite glass-covered seats, like those at Hastings and St. Leonard's, for which these places deserve commendation; walls for shelter from wind, and for reflection of the sun when it shines. We must induce our patients to place themselves under the entire control of their local medical men during their whole stay at one of our health-resorts, and to learn that the guidance of the medical man is as important as the climate, and in many cases more so. By judicious management, the medical man is often able to counteract the disadvantages of an indifferent climate, and to bring into action all its good points; while, without the guidance of an intelligent physician, the natural and social attractions, associated with a satisfactory climate, may become sources of failure. There is no doubt in my mind that it would be a very great advantage to many invalids, especially those who are not very rich, if there were well arranged health-establishments, under the supervision of good medical men, and that, through them, better results could be obtained from our home-climates.

And once more, gentlemen, let me plead for the multiplication of small hospitals for the consumptive poor in good situations, such as I have sketched in the second lecture. You have always treated me with so much kindness and consideration since you have, so to say, adopted me as one of yourselves, that I am hopeful that you will give

your countenance to the plans I have suggested, and that, through you, they may lead to some good. Then, gentlemen, the recollection of the hours which I have had the pleasure of spending with you, in these lectures, will belong to the brightest of my life.

THE LUMLEIAN LECTURES ON SOME POINTS IN THE NATURAL HISTORY OF PRIMITIVE DRY PLEURISIES.

Delivered at the Royal College of Physicians of London.

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LECTURE III.

IN the last lecture I arranged, for the sake of convenience, the pathological changes in the lung resulting from primitive dry pleuritis under four heads, and I intimated that for each of these there was to be found a corresponding clinical state or autonomy. I proceed now to consider these clinical states, to describe their chief characteristic signs, and to show in what manner they may be distinguished from other states resembling them, but having a different meaning and importance. The former, for descriptive purposes, I shall name the neoplastic pleural membrane state, the fibroid lung state, the bronchiectatic state, and the phthisical fibroid lung state.

And, first of all, concerning the neogenetic pleural membrane state. The patient may have the aspect of health, and experience no subjective indications of the presence of disease. If any exist, they will be limited to uneasiness or pain in the affected side, an occasional dry cough, feverishness, and general *malaise*. On rare occasions, the patient may be conscious of the existence of pleural friction. The physical signs are a slight decrease, with some irregularity, of the thoracic movements of the affected side, some diminution of the tactile vocal fremitus,¹ just notable but unequal dullness to percussion, a shifting, rubbing, or grating friction, enfeebled breath-sounds, and an altered vocal resonance. In some cases, instead of pleural friction, there may be heard crepitation, crackling or clicking; and we shall know from the superficial characters of these sounds, from their resistance to respiratory efforts, and from their association with gratings or rubbings, that they are of pleural origin.

Having thus before us a dry pleurisy, we have to determine if it be a primitive or a secondary affection.

If there be signs of disease in the corresponding or in the opposite lung, it is probable that the pleurisy is secondary; and, if without such signs, there be grave constitutional disorder, it is equally probable that the pleural inflammation has arisen out of some pre-existing malady; and this pre-existing malady may exercise its causal influence either through some local growth, such as tubercle, lying beyond the range of physical detection, or through some constitutional state, such as adenoma or syphilis. On the other hand, if there exist no signs of local disease, and no serious symptoms of constitutional disturbance, it is presumable that the case is one of primitive dry pleurisy. This affection may arise from mechanical injury or from cold, and it may be a local expression of such non-malignant constitutional disorders as rheumatism and gout.

The future course of a case of primitive dry pleurisy depends upon causes seldom visible or calculable, and is therefore absolutely uncertain. The signs of the malady may subside in a few weeks, or they may continue for months, or they may come and go for two or three years, and then either entirely disappear or invade the lung. Sometimes, after a variable duration, the dry stage issues in serous effusion, which pursues its ordinary course, and ends eventually in a thickened pleura and a contracted lung. In one case, seen with Dr. Sedgwick, and in another, seen with Dr. Warrington, it appeared as if the structural elements of an old adventitious pleural membrane developed through metaplastic processes into malignant fibrous growths. This result, however, must be infinitely rare; and, when

¹ I do not forget that Dr. Walshe has spoken otherwise; and it is only after careful investigations, often repeated, that I venture to differ from one of the most accomplished auscultators of our time.