

Some remarks on the climate of the Swiss Alps, with pulmonary cases treated at Maloja (6,000 feet) / by A. Tucker Wise, M.D.

Contributors

Wise, A. T. Tucker 1848-1928

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Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>

SOME REMARKS ON
THE CLIMATE OF THE SWISS ALPS,

WITH
PULMONARY CASES TREATED AT MALOJA (6,000 FEET).

BY A. TUCKER WISE, M.D.

It is no exaggeration to say that the conditions of bright Alpine weather during mid-winter are difficult to describe, without being accused of extravagance; therefore, the only reply to be made to theoretical critics, who quote meteorological details to demonstrate the impossibility of feeling warm in the snows of the mountains, is—that the practical experience of a visit to high lands should be undertaken by anyone who desires to speak with authority on the subject of climate. The high level health-resorts are, however, greatly appreciated by a section of the public, increasing in numbers each year.

Latterly I have been struck with the importance of observations on atmospheric electricity. Doubtless electricity should be regarded as a curative factor in the study of climate. Dr. Denison, of Denver, has already made some interesting remarks on this matter. Writing of Colorado, he says—"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. I have yet to meet with an experience which will dissuade me from advising a consumptive to live in the open air, and sleep on the ground, *whenever conditions are favourable for so doing.*"

My notes on atmospheric electricity are not yet sufficiently complete to justify anything but the statement that the dryness of the air in the Swiss Alps favours electrical commotions, affecting principally the cutaneous circulation. The slightest friction of clothes, walking across a carpeted room, the impact of air on the body, &c., will give evidence of changes being evoked in the electrical condition of the surface of the body. This can be tested clearly by a condensing electroscope. Electric tension, too, is more marked in dry mountainous regions, giving origin to the formation of large quantities of ozone, which body plays a very important part as regards climate.

Putting aside all observations by instruments of precision, there is one unique feature of Swiss mountain climate which must be kept in mind, especially with respect to pulmonary troubles, viz., the possibility of espiring cold dry air, without the sensation of feeling chilled and pinched by the low temperature. Various explanations have been given for this, the main reason, however, for the immunity from the *sensation* of cold, is the small amount of watery vapour suspended in the air. Whether the dread of a low temperature exists in the minds of Americans to the same extent as amongst many English in Europe, I am unable to say; this fancy nevertheless drives hundreds to the shores of the Riviera, who would obtain more amusement and do much better as regards permanent benefit to their health, in the sunshine of the Alps.

The out-door amusements which really enter into a part of the "treatment" at these places are skating, sleighing, tobogganing, and snow-shoeing, besides the ordinary exercise of walking, sitting out in the open air and in shelters, sketching, reading, &c. In-door amusements are the usual ones of music, dancing, amateur and other concerts, theatricals, and various social gatherings. In the Engadine a day may be spent thus:—At 8.30 a.m. or 9 a.m., breakfast; as soon as the sun appears on the snow a walk is taken, or the skates put on and the ice rink visited. Some sit in shelters or on the ice watching the skaters, protected from the glaring sun by smoked-glass spectacles and parasols. About 12.30 p.m. lunch is taken. Those desirous of getting as much open air exposure as possible have their lunch sent to them on the ice or in the wooden sheds constructed for these purposes. After lunch the skates can be changed for the toboggan, or a sleigh drive taken to some village or place of interest. A snow-shoeing party may be got up, and a small excursion made to the inaccessible nooks of the woods and side valleys, all of which are rendered easy of exploration by the Canadian snow-shoe. Pic-nics, too, are often undertaken in this way or by sleigh,

combined with a run down a sloping road on the Canadian sled. The temperature on these occasions may be from 15° to 25° Fahr.; the snow and roads are quite dry, and a shawl thrown over the surface of the crisp dusty snow serves well for reclining or sitting down.

As I am chiefly responsible for bringing forward both Wiesen and Maloja as health resorts for early pulmonary cases, it is a satisfaction for me to be able to show some results which have been obtained by winter residence at the latter place. Details of the climates of Wiesen and Maloja can be found in my third edition of "Alpine Winter in its Medical Aspects." (Churchill.)

In the following cases treatment has been omitted, but it may be mentioned that the practice carried out varied somewhat with each patient, and consisted of graduated exercise, with suitable clothing and diet, plenty of fresh air, dry cupping, medical rubbing, and counter irritation. Milk, cod-liver oil, and medicines when circumstances demanded it; drugs were, however, avoided as much as possible.

The cases are taken as they occurred in my note book of pulmonary complaints of the past winter; there are no omissions of unsatisfactory results.

No. 1.—Æt. 26. Congestion of right apex, dulness, feeble breath sounds, vocal resonance increased, and slight recurring crepitation. Pulse 64; temperature 97·2. Weight, 8 stone 7 lbs. Slight cough; no expectoration.

Result.—Increased expansion of chest, right side 1 centimetre, left side $\frac{1}{2}$ centimetre; pulse 68; temperature 97 to 98·4. No abnormal physical signs. Marked gain in strength, appetite good. Weight, 9 stone 6 lbs.

No. 2.—Æt. 29. Congestion of right apex, slight dulness, with harsh expiratory murmur, hæmoptysis on three or four occasions during the previous twelve months, no cough nor expectoration. Weight, 9 stone 3 lbs.

Result.—No hæmoptysis during the winter, great gain in strength and capacity for exercise—skating, walking. Voice power increased; is now able to sing, although previous attempts during the last three or four years have always resulted in failure and hoarseness. Weight, 9 stone $5\frac{3}{4}$ lbs.

No. 3.—Æt. 24. Cough and hæmoptysis two years ago when in the United States. The appetite failed at that time, and there was great loss of

flesh with night perspirations. After spending three months in Europe he has undergone much improvement. On examination moist râles were heard over the apex of the left lung with pleuritic crackling and slight dulness. On the right side jerky breathing was heard underneath the clavicle. Yellow expectoration with morning cough. Temperature 98 to 100. Weight, 9 stone 13 lbs. Bacilli in sputa. Pulse 100 to 116.

Result.—After summer residence dry sounds replaced moist sounds. The expectoration was about the same. Weight 10 stone. After winter residence the weight was 9 stone 13 lbs., it had been up to 10 stone 5 lbs., but was reduced by indiscreet exercise, as all abnormal physical signs and general health had improved. Pulse 84 to 96; temperature 98·4. Bacilli in sputum undiminished in number.

No. 4.—Æt. 49. Consolidation of the superior lobe of the left lung. Commenced with slight hæmoptysis a few months ago. There was no loss of flesh nor night perspirations. Cough frequent, with expectoration of yellow heavy mucus, occasionally streaked with blood. Pulse 88 to 104; temperature 98·4 to 99. Weight, 9 stone 10 lbs. Bacilli in sputum.

Result.—Strength greatly increased after the winter's residence, and expectoration lessened. Weight 9 stone. Pulse 90 to 120. This patient died in Italy during the subsequent spring from an attack of pericarditis.

No. 5.—Æt. 28. Left front of chest immobile, portions of three ribs have been excised for empyæma. Respiratory murmur inaudible over the left lung, where there was a cavity in the apex communicating with pleura. Harsh breathing in right apex, extending to second rib, otherwise the right lung was normal. Pulse 96; temperature 98·4. Morning cough, and occasionally violent fits of coughing after meals. Breathlessness on exertion; appetite good; sleeps well. Weight, 10 stone 8 lbs.

Result.—General improvement. Recommended a sea voyage and then to return to Maloja for a second winter. Weight, 10 stone 12 lbs. Pulse 92.

No. 6.—Æt. 15. Illness commenced in the spring of 1882 with slight cough, and hæmorrhage on two occasions, malaise and anæmia. The winter of 1882-3 was spent at Bournemouth, 1883-4 Algiers, 1884-5 Tunbridge Wells and the Riviera. There was always a little cough and yellow expectoration. The sputum was tinged with blood at Alassio in April, 1885, and the temperature at that time ranged from 99·4 to 101. Came to the Engadine in July 1885, when the following notes

were made :—Mucous membrane of mouth and fauces anæmic. Dulness over the whole of left lung, with numerous dry and moist râles. Rhonchi heard over the lower lobes of right lung. There was retraction of the cardiac lobe, and displacement of the heart, with flattening beneath the clavicle extending to fourth rib. Fatigued easily, and breathless on slight exertion. Pulse 116; temperature 98·8 to 99. Bacilli in sputum.

Result.—There was gradual improvement during the summer of 1885. On 19th November, 1885, she weighed 7 stone 5 lbs.; at the end of March, 1886, 7 stone 10 lbs.; March, 1887, 8 stone 13 lbs. The aspect of this patient was greatly changed for the better; she was able to skate, toboggan, and mount 500 feet of Maloja Pass without fatigue. The left side of the chest was considerably contracted, but gave slight signs of filling out again. A moderate sized cavity was dry and contracting. There was still a little cough with nummular expectoration in the mornings. Bacilli were found in large numbers. Pulse 80 to 100. Temperature normal. The gain in weight in sixteen months was 22 lbs.

No. 7.—Æt. 26. Contracted pneumonia in 1877, 1883, and 1885. Absorption of inflammatory products was incomplete in right apex. Expiratory murmur was harsh, and prolonged over the whole of the right lung. Weight, 11 stone 2½ lbs.

Result.—Respiration normal. The right infra-scapular region still remained dull on percussion, but the fringes of the lungs in front gave signs of compensatory emphysema. Weight, 11 stone 7lbs.

No. 8.—Æt. 20. Insidious consolidation of right apex. Dulness over right subclavicular region with augmented vocal vibrations, rough and prolonged vesicular murmurs, bronchophony and morning cough with muco-purulent expectoration, loss of appetite and strength, with night perspirations. Temperature 98·4. Bacilli in sputum.

Result.—The ten months—June to March—were passed between Davos and Maloja, at the end of this time there was a disappearance of all serious signs. Slight flattening could be discerned beneath the right clavicles, where the dulness and excessive vocal vibration were almost imperceptible; bronchophony insignificant; no cough nor expectoration. Weight, 10 stone 10 lbs.

No. 9.—Æt. 35. Loss of weight generally for eighteen months with dyspepsia. Loss of voice after speaking for 10 or 15 minutes. Perspires a little at night. There was harsh vesicular murmur over the right apex

and feeble breathing in the right base, but no râles or other adventitious sound. Pulse 84. Weight, 11 stone 10 lbs.

Result.—A slight harshness in expiration alone perceptible over the right lung. Voice stronger and appetite good. There was no dyspepsia, and the strength was greatly increased. Weight, 12 stone $2\frac{1}{2}$ lbs. Pulse 80.

No. 10.—Æt. 27. Subject always to winter colds, which end in cough. Dulness over the apex of right lung, with bronchophony and harsh expiration. No râles or crepitations. Becomes breathless and fatigued after exercise. Pulse 76 (sitting), 100 (standing). Weight, 11 stone $5\frac{1}{2}$ lbs.

Result.—He could mount 1,100 feet without breathlessness or fatigue. All abnormal signs had disappeared. Pulse 76 (sitting), 92 (standing). Weight 11 stone 6 lbs.

No. 11.—Æt. 32. Hæmoptysis for four or five years, loss of flesh, and bad family history. Never much expectoration nor high temperature. There were pains complained over the apex of right lung, where there was high-pitched jerky respiration, but no râles. Liver enlarged. Pulse 80. Weight, 8 stone $8\frac{1}{4}$ lbs.

Result.—After 23 days residence in the month of February the body weight increased to 8 stone 12 lbs., but there was no change in the physical signs. Pulse 72. A little hæmoptysis occurred on one occasion attributable solely to indiscretion while mounting the pass.

No. 12.—Æt. 45. An Anglo-Indian, on two years' sick leave. There was dulness under left clavicle, with a small area of increased vocal resonance. No râles of any kind. Pulse 80. Loss of muscular power.

Result.—This gentleman diminished in weight whilst in Europe from 13 stone 4 lb., to 12 stone $4\frac{1}{2}$ lb. with great advantage. He could take much exercise, descending the Maloja Pass (1,150 feet) on a toboggan, and mounting again on foot, sometimes twice daily. No abnormal signs remained.

No. 13.—Æt. 20. Convalescent from typhoid fever and pneumonia. Pulse 100 (sitting), 112 (standing). Weight 11 stone $3\frac{1}{4}$ lbs.

Result.—After one month's residence, in February and part of March, there was considerable gain in strength and respiratory power. Pulse 92 (sitting), 100 (standing). Weight, 11 stone 8 lbs.

No. 14.—Æt. 40. Was at Davos about six years ago with catarrh of right apex, which was completely cured by three or four months' residence. There was now shortness of breath and dulness over both apices, with harsh expiratory sound and dry rhonchus. Very slight increase of vocal resonance anywhere, but limited expansion of upper part of chest. Pulse 80 (sitting), 85 (standing). Bacilli in sputum. Temperature 98·4.

Result.—Beyond an increase in the capacity for exercise, and a diminution of dry rhonchi, there was nothing to note.

No. 15.—Æt. 19. Slight cough for four years. No expectoration nor loss of flesh. There were imperfect respiratory sounds in both apices of the lung, especially marked on the left side with deficient entry of air over the whole of left dorsal region, which was somewhat dull on percussion. No râles. Pulse 92; temperature 99. Weight, 8 stone 6 lbs.

Result.—Normal entry of air was manifest in both apices. The dulness over the left lung was greatly lessened. Temperature 98·4; pulse 78. Weight, 8 stone 4 lbs.

No. 16.—Æt. 40. Obtained great benefit from wintering at Davos six years ago. During the last twelve months constant colds have ended in a cough with yellow expectoration, sometimes streaked with blood. There was bronchial breathing and dulness over the apex of the left lung with marked vocal resonance and bronchophony back and front. The signs indicated congestion around, and in the neighbourhood of a cavity, which had cicatrised and contracted six years ago. An occasional dry rhonchus was heard in the left base. Pulse 100; temperature, 97; respiration 24.

Result.—The time spent in Maloja (one month at the end of winter) was insufficient to produce any very marked improvement in the physical signs. The cough, however, was much diminished and appetite improved. Pulse 84 (sitting), 100 (standing); temperature 97·8; respiration 20.

No. 17.—Æt. 23. Prolonged, expiratory murmurs in both apices, especially perceptible on the right side with increased vocal resonance and fremitus. There was slight cough with muco-purulent expectoration containing bacilli. Pulse 100 (sitting), 124 (standing), intermits on deep inspiration; temperature 98·2. Weight, 11 stone 3 lbs.

Result.—Entire disappearance of all abnormal signs in the chest. He was able to take ordinary exercise without any fatigue. Pulse 92

(sitting), 100 (standing), no intermissions on deep inspiration. There still remained a slight expectoration, in which bacilli could be distinguished. Weight, 11 stone 13 lbs.

No. 18.—Æt. 37. Consolidation of the whole of left lung, dry rhonchus, whispering sounds and crackling over the upper lobe, with shrinking and uncovering of the heart, a troublesome cough, dyspnoea and loss of appetite. Respiration 26; the temperature varied from 97 to 101; pulse 116 to 125. Bacilli in sputum.

Result.—This case was confined to bed a good deal during the whole winter, on account of dyspnoea. Apparent improvement was, however, noticeable by a slight expansion of the left chest and marked expansion of the right, taken by cystometric tracings. Pulse 92 to 100; temperature 97 to 99.4. Weight, 7 stone 12 lbs. Bacilli undiminished.

No. 19.—Æt. 23. Illness commenced three years ago with a cough and loss of flesh. There was dulness and imperfect entry of air in both apices, more marked on the left side, where crackling was heard. The mucous membrane of palate and fauces was pale and anæmic. Cough, and yellow expectoration containing bacilli. Pulse 116 (sitting), 124 (standing); 140 (after examination of the chest). Weight, 8 stone 11 lbs.

Result.—Cough almost gone and expectoration much lessened, air entered more freely in both apices and left base, but the dulness had not diminished. Pulse 88 (sitting), 100 (standing); temperature 97 to 99. Weight, 9 stone 11 lbs.

No. 20.—Æt. 43. Was cured fifteen years ago of a "breaking down of lung tissue" in left apex by one winter's residence at Davos and several years afterwards spent in South Africa. Recently, after a bad attack of bronchitis in Germany, a return of old symptoms appeared. There was considerable flattening of the right subclavian region, with impaired resonance, moist rhonchi were heard over the whole of the lung, especially clear in the interscapular space. Vocal fremitus was not increased, nor was absolute dulness perceived anywhere. In both apices there was a harsh expiratory murmur on deep inspiration. Pulse 120 (sitting); temperature varied little from the normal. Bacilli in sputum. Occasional cough with muco-purulent expectoration. Weight, 10 stone.

Result.—During the portion of the winter (3 months) spent at Maloja

he had two or three attacks of feverishness in the afternoons, the temperature rising to 106. At the end of three months dry rhonchus was heard in the right lung, and increased resonance in both lungs could be made out. There was no gain in strength and expiratory power. Pulse 102 (sitting), 120 (standing); temperature 100 (taken at 5 p.m.). Weight, 10 stone $\frac{1}{2}$ lb. This patient had to leave on business before completing a whole winter's residence.

No. 21.—Æt. 23. Enjoyed good health up to four or five months ago, when hæmoptysis occurred. The chest presented signs of congestion of left apex and dulness, increased vocal fremitus, slight bronchophony, and harsh expiratory murmur. Pulse 76 (sitting), 100 (standing), intermits on deep inspiration; temperature 98. Weight, 8 stone $12\frac{3}{4}$ lbs.

Result.—All dulness of chest disappeared, the expiratory murmur was still a little harsh on both sides of the chest in the subclavicular regions, otherwise there were no abnormal signs. Pulse 68 (sitting), 92 (standing); temperature 98. Weight, 9 stone 7 lbs.

No. 22.—Æt. 22. Extremely bad family history (mother and three sisters died of phthisis). There was imperfect expansion of the chest, with cooing rhonchus in left apex, extending over the cardiac lobe, and heard plainly between the scapulæ. Dry click in right apex, slight expectoration, coloured once or twice with blood. Pulse 88 (sitting), 104 (standing); temperature 99. Weight, 9 stone $1\frac{1}{2}$ lbs.

Result.—With the exception of a slight increase of vocal resonance over the right apex, there was no dulness nor abnormal sounds anywhere. Pulse 76 (sitting), 80 (standing); temperature ranges from 96·8 to 98·1. Weight, 10 stone 3 lbs. Was able to take plenty of exercise, skating, snow-shoeing, tobogganing, &c.

No. 23.—Æt. 19. Was in an anæmic and debilitated condition from over study. There were no signs of any damage to lungs, but the expansion of the upper portions of the chest was insufficient, and the family history bad. Pulse 108 (sitting), 120 standing; temperature 98·4. Weight, 9 stone 8 lbs.

Result.—Complete disappearance of anæmia, and much gain in strength, takes a fair amount of exercise. Pulse 92 to 100. Weight, 9 stone $6\frac{1}{2}$ lbs. Expansion of chest increased one centimètre.

The gain in weight being such a striking feature in the majority of these cases, I append a table of ages, duration of residence, &c. There is also a point in all chest troubles which I find useful in determining progress or retrogression, viz., the difference in the number of pulse beats in the sitting posture and standing position, after walking across a room.

ABSTRACT of PULMONARY CASES treated at Maloja.

No.	Age.	Duration of residence.	Weight gained	Weight lost.	Diminution in pulse rate.	Remarks.
1	26	4½ months	13 lbs.	—	none	Remarkable improvement.
2	29	4½ „	2¾ lbs.	—	0	Great improvement.
3	24	7½ „	0	—	16	Improved.
4	49	7½ „	—	1 lb.	none	Slight improvement.
5	28	4½ „	4 lbs.	—	4	General improvement.
6	15	16 „	22 lbs.	—	26	Remarkable improvement.
7	26	4½ „	4½ lbs.	—	0	Great improvement.
8	20	5 „	not noted	—	not noted	Great improvement.
9	35	4½ „	4½ lbs.	—	4	Great improvement.
10	27	4½ „	½ lb.	—	0	All signs disease disappeared.
11	32	23 days	4¾ lbs.	—	8	Marked improvement.
12	45	4½ months	—	15¼ lbs.	8	All signs of disease gone.
13	20	1 „	4¾ lbs.	—	8	Marked improvement.
14	40	3 „	not noted	—	0	General improvement.
15	19	4½ „	—	2 lbs.	14	Slightly better.
16	40	1 „	not noted	—	36	Marked improvement.
17	23	4½ „	10 lbs.	—	8	All signs of disease gone.
18	37	4 „	—	5 lbs.	16	No improvement.
19	23	4½ „	14¼ lbs.	—	34	Remarkable improvement.
20	43	3 „	1¾ lbs.	—	8	Slight improvement.
21	23	5½ „	8¼ lbs.	—	8	Great improvement.
22	22	4½ „	15½ lbs.	—	12	Remarkable improvement.
23	19	2 „	—	1½ lbs.	16	Improvement.

ABSTRACT OF THE FINANCIAL STATEMENTS OF THE

Particulars	1911-12	1912-13	1913-14	1914-15	1915-16
Revenue	100	100	100	100	100
Capital	100	100	100	100	100
Reserves	100	100	100	100	100
Expenses	100	100	100	100	100
Profit	100	100	100	100	100
Loss	100	100	100	100	100
Assets	100	100	100	100	100
Liabilities	100	100	100	100	100
Equity	100	100	100	100	100
Debt	100	100	100	100	100
Net Worth	100	100	100	100	100