rado, and the majority do better in the equally dry but warmer and less elevated climates of New Mexico and Arizona. Then there are the pneumonic cases—those in whom there is considerable febrile reaction to the disease and in whom an inflammatory process has been set up. Cases of this kind are not so well suited to the higher ground. The air is apt to be too stimulating for them. They usually improve more satisfactorily lower down and in a moister air. Of course, all of these cases come to us more or less mixed, but my experience is, that if you can trace the history of your patient you will generally find something to guide you in caring for the case. Therefore, I consider that the taking of the history of the patient is of great value in shaping his treatment.

The mental condition of the patient must also be taken into account in sending him away from home. The possibility of his being affected by homesickness must be considered. It is important, therefore, to know something about the habits of your patient. For example, a person who never enjoys traveling, and is always longing for his own fireside, is far better left at home, unless you can arouse his attention towards his new surroundings and contrive to make them interesting to him. I remember one man who could not get well in Colorado because he pined for his unhealthy life in Philadelphia and sadly missed, he quaintly said, "even the stink of the all-pervading gas." On the other hand, there are those who enjoy the change. In all therapeutic measures change of mental attitude is an important factor, but you can not hope to do anything to influence it unless you understand your patient.

The question of social condition is likewise important. It may be said that there are three classes of patients: The rich, the comparatively well-to-do, and the poor and laboring class. The rich are benefited as a rule by being sent to higher altitudes, other conditions being appropriate, because this is generally the greatest change that can be given them. They have presumably been living under good hygienic conditions, and the greater the change climatically they can be given, the greater is likely to be the effect on mind and body. With the well-to-do, who are accustomed to be continually occupied, it is sometimes a serious question whether it is desirable to put them in a place where they can have no occupation. It is important that the physician should direct their minds into new channels of thought and give them new ways of occupying their time. I do not mean necessarily remunerative ones, but something that will occupy their time while it excites their interest and makes them happy and comfortable. Among the poorer class of patients, those who have been used to labor out of doors, will generally be found to do better than those who have followed indoor occupations. The former can generally be set to some work that will keep them interested. The indoor laborers are more difficult to deal with and the outlook for their recovery is not as encouraging. Still, they are not, for these reasons, necessarily barred from altitude treatment.

Other matters which must be considered before the decision is made to send a patient away from home for climatic change, are the special symptoms of the disease and the stage to which it has advanced. Physicians at altitudes, like their confrères in all other resorts, always demand that patients should be sent to them at the earliest possible stage. While this condition is always to be preferred, removal to an altitude need not necessarily be made at an early stage.

There is no reason why cavity cases of moderate extent and even of long standing should not go to altitudes, other conditions being suitable; but all cases which are deteriorating rapidly ought to be first treated like hospital patients suffering from any other acute disease. Afterwards certain of such cases can be sent to an altitude with much advantage.

Hemoptysis is not necessarily a bar. At the recent meeting of the American Climatological Association at Niagara Falls, Dr. Bonney, of Denver, read an important paper in which he confirmed the conclusions that several of us had arrived at from our own observations, viz., that hemorrhage cases do no worse at an altitude than elsewhere and probably better, and that the fact of their bleeding is not of itself an argument against sending them to a high climate. Another important thing is for physicians at home to study their cases thoroughly before sending them away for climatic change. In this connection I think the state institutions and other home sanatoria that are now springing up everywhere will be of immense value. From these institutions we may expect to have more and more well-selected cases sent to high altitudes with the greater certainty of good results.

Finally, let us remember the oft-quoted dictum that it is not only the individual sickness we have to consider, but also the sick individual.

ADAPTABILITY OF SOUTHERN CALIFORNIA AND SIMILAR CLIMATES TO THE NEEDS OF CONSUMPTIVES.*

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When we speak of Southern California as a climate, or a place to live, we usually mean that part of the country lying between the ocean and a range of mountains forming an irregular semicircle and extending from a point near to and north of Santa Barbara to a point some miles back of San Diego. We do not mean the Colorado desert lying east of this mountain range, nor the Mojave desert north of it, although they are both geographically in Southern California.

The climate, then, of Southern California is, to some degree, adaptable for consumptives because it has: 1, relative dryness; 2, small rainfall; 3, large degree of sunshine; 4, low and high altitudes; 5, mildness of climate throughout the year, permitting outdoor life; 6, low barometer range, and finally, 7, a good record in tuberculous cases. These conditions are generally regarded as important for consumptives. They all probably have advantages, although some of these are wrongly explained and some overestimated.

For example, dryness is supposed to be beneficial by reducing expectoration. For this reason it is probably actually harmful, by increasing the retention and tenacity of the expectoration. It can not be harmful to have enough moisture in phlegm to cause it to be easily moved through tubes, and excessive dryness prevents this. Dryness is valuable, because it lessens the cough and so increases the quiescence of the lung tissue, which is a consideration of the greatest possible importance. A moist climate is thought by many to be very injurious to consumptives, yet many cases recover at San Diego and

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Santa Barbara, both on the Pacific coast, and also in the Sandwich Islands, surrounded by the ocean, as well as on shipboard at sea.

High altitudes doubtless help some consumptives, but not by expanding the air vesicles of the diseased tissue. This is harmful and ought to be discouraged. The value must be in the effect on the red corpuscles, and some of the other and cognate changes in the physiologic conditions and forces. Low altitudes give more oxygen in the air breathed and less perturbation from low barometric pressure than high ones do.

The air in Southern California is relatively dry as compared with the middle and eastern parts of the country. The dryest region is, of course, farthest from the coast. The mean relative humidity is, by comparison with other representative places, as follows, expressed in percentages of saturation: Chicago, 72; Denver, 53; San Diego, 69; Los Angeles, 66; Southern California foothills (Pasadena to Redlands and Riverside), 64.4 to 65; Yuma, 46, and Prescott, 74.

The record of the actual amount of water dissolved in the air of these places, by comparison with the relative dryness, presents what at first seems to be a puzzle. What is relatively dry may be actually moist. It is rational enough, however, when we consider the laws of meteorology; and it shows how our calculations in the management of the sick are based wholly on the relative and not the actual dryness of the air.

We find that the mean amounts of water in the air of the places named—expressed in grains of water to the cubic foot of air—are as follows: Chicago, 2.80; Denver, 2.14; San Diego, 4.19; Los Angeles, 4.00; foothills, unrecorded; Yuma, 4.12, and Prescott, 2.20.

Thus Prescott, which has the highest relative moisture of all the places given—74 per cent. of saturation—has a very small degree of real humidity; and Yuma, which has the lowest relative humidity, carries more water per cubic foot of air than Los Angeles or Chicago, and almost as much as San Diego.

The rainfall record shows Southern California to have a small amount of precipitation. The rains come mostly from December to April inclusive. The number of days of falling weather are, even through these months, fewer than in the East. The annual rainfall in Los Angeles and the average of the eastern foothills—Redlands, Riverside and San Bernardino—is 15 inches. This is the same as at Denver, while the western foothills—Sierra Madre, Pasadena—have 16 inches, and San Diego has but 10 inches.

The relative degree of cloudiness and sunshine is usually reckoned as an element in the general question of humidity. It is more an element in the mildness of a climate. The mean percentages of cloudiness by day of the places named are as follows: Chicago, 51; Denver, 38; San Diego, 42; Los Angeles, 34; western foothills, 30; eastern foothills, 28.9; Prescott, 24, and Yuma, 17.

The altitudes of Southern California are mostly low, from sea level to 1500 feet at the foothills near the mountains. If low altitudes are unadapted to consumptives, then these regions are objectionable. Los Angeles has an elevation of 300 feet; Pasadena, 800; Sierra Madre, Altadena, Redlands, Riverside and the Ojai valley from 1000 to 1500 feet. But there are regions of high altitude where patients are often sent for variable periods, with more or less benefit. One of these is the mountain resorts back of Pasadena, including Wilson's Peak, Echo Mountain and Alpine Tavern, whose altitudes vary from 3500 to 6000 feet. Another place that has been a resort for a few patients for many years is Strawberry Valley, in the San Jacinto mountains, lying southeast from Riverside and being on the divide between the coast plateau to the west and the Colorado desert to the east; it looks down upon Indio and is the dry desert resort for consumptives. The elevation of Strawberry Valley is 5000 feet. This is an ideal place for the sick, but has the disadvantage that it is reached only by a stage ride of twenty miles from San Jacinto station on the Santa Fe railway. A powerful and speedy automobile service has been introduced, and it is hoped will make this journey much less objectionable.

The weather in Strawberry Valley is much like that of the mountains of Colorado, with occasional showers during the summer and some snow in the winter; the temperature ranges from 20 degrees on the coldest nights of winter to 85 or 90 in midday of the hottest days of summer. The scenery reminds one of the White Mountains of New Hampshire. The California Health Resort Company, Los Angeles, has acquired a large tract of land in this valley and has just finished the construction of a sanatorium which will accommodate a large number of patients, whom, it is expected, will be mostly of the tuberculous class. The plans and regulations of the company indicate a sanatorium on the plan of those of Sharon and Rutland in Massachusetts, and of the better class of those of Europe. So much money has been invested in the enterprise that the company can not afford to drop in its standard of management, and it is promised to the profession that in the care of the patients the directions and wishes of the attending physicians who send patients shall be carried out in their management as far as possible, consistent with certain definite rules of the institution as to fresh air, outdoor life, supervision of exercise, rest and amusements, as well as the dietary and feeding. The water supply of the place is perfect and in the construction of the sanatorium every provision known to good hygiene seems to have beeen carried out.

The one quality in which the climate of Southern California is pre-eminent is its mildness and the ease with which one can live out of doors most of the time, both day and night, and during all seasons of the year. A dozen days of rain and as many of high wind are about all that need keep any patient wholly indoors, and, even in these days, he may have perfect ventilation of his room. There is nearly every day a breeze from the ocean during the day and one down from the mountains at night.

Occasionally, on a winter's night, the temperature drops for an hour or two slightly below freezing point, and during most of the days of winter and many of those of spring warm wraps and overcoats are acceptable at all times of the day. The warmer days of summer are, from 10 to 5 o'clock, sometimes very warm as shown by the thermometer, the temperature ranging from 85 at the coast to 102 at the eastern foothills—those farthest from the ocean; but to the human body properly clothed these temperatures are never experienced. With thin and light-colored clothes and hat, you would guess any day that a temperature of 100 was 85 or 90. Within twenty or thirty miles of the coast invalids are rarely uncomfortable from heat in summer even for an hour. The diathermancy of the atmosphere, due to dryness, especially some miles inland from the coast, is so great—particularly in summer-time—that the sensible as well as the real temperature of the air drops quickly as soon as the sun goes out of sight, whether under a cloud or at night. This fact makes it necessary to change one's clothing or

wraps much more often than is necessary in the East.

Mean temperatures are somewhat unenlightening as to the question of physical comfort at times of extreme fluctuations, but they are worth considerable by comparison. Mean temperatures of summer and winter are shown by the following table:

	Summer.	Winter.
Chicago	68	22
Denver	69	29
Prescott	70	37
Yuma	90	55
Los Angeles	69	54
San Diego	68	54
Eastern foothills	75.3	54.7
Western foothills	71	52.6

I can not doubt that the slight fluctuation of the barometer in Southern California is an advantage to the sick. The fluctuations in the barometer in Southern California are not more than half what they are in the eastern part of the country. A daily journey up and down a mountain gives one fluctuations in the barometric pressure, and such an exercise is not thought to be harmful. But a sudden drop in the pressure will often give one a neuralgic or so-called rheumatic pain and disagreeable and depressed feelings. Some evidence has been accumulated in the past to show that at times of low barometer patients recover less rapidly and bear surgical operations less well. Fluctuations in air pressure are of doubtful value in any sickness unless prescribed for the particular case.

Finally, the experience of the past is valuable and beyond controversy. A large number of patients have recovered from tuberculosis in Southern California and have remained for many years with all the appearances of health. How large a proportion of those who have gone there with the disease have recovered nobody can tell. That this climate is better for consumption than some others in the United States, I would not pretend to say. But I know that experience has proved its great value, and the experience has justified the theory that most of the climatic benefit that ever comes to this pathetic class of patients is due to their ability to live practically out of doors a large part of the time, night and day. This is a doctrine, too, that to my mind has the support of common sense.

NINETEEN YEARS' EXPERIENCE WITH CREOSOTE IN TUBERCULOSIS.*

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The general who has a difficult battle in contemplation not only surveys the ground and counts his men, but selects his best gun and places it at advantageous points, where it will not only offer the greatest protection to his men, but do its most effectual carnage to the enemy. Other things being equal, success or failure in the treatment of pulmonary tuberculosis depends largely upon a judicious selection and proper administration of creosote.

Being located as I am, at a point where a very large number of tubercular patients are directed by the best physicians of the country, I have a good opportunity to obtain a fairly correct opinion of the profession's confidence in creosote. My records for the past nineteen years, of 2183 cases of tuberculosis, scattered from all points of the United States and the provinces of Canada, show that thirteen out of every fifteen patients were either taking creosote or had had it prescribed. These statistics are of value in arriving at a consensus of opinion of the profession to-day, when we observe that for the last seven years of this record, embracing more than one-half of the cases, seventeen out of eighteen were either taking creosote or had had it prescribed.

Much of the prejudice of the laity and disappointment to the physician in the use of creosote is due to the administration of an impure article. While it is noted that the bulk and file of these unfortunates are taking creosote, it is observed that so little attention is paid to its purity that many are getting nothing short of carbolic acid or a true wood product. No plain beechwood or any other wood creosote should ever be administered by stomach or applied locally. Creosote made by a double distillation from beechwood tar is practically free from carbolic acid and all other impurities; it possesses the greatest antiseptic and germicidal properties, and at the same time there is an absence of all nauseating, irritating and escharotic effect.

Mr. Thomas Morson's test is simple and satisfactory. It consists in the solvent power of glycerin over carbolic acid, which is dissolved by it in all proportions, while pure creosote is insoluble in glycerin, or nearly so, while carbolic acid is dissolved by it in all proportions. Consequently, if any liquid assumed to be creosote dissolves largely in glycerin it probably consists in whole or in large part of carbolic acid.

Creosote made by the double distillation of tar from beechwood, complying with the Morson test, can be administered in enormously large doses in the most delicate stomach, with decided clinical success. Rarely do patients come under my care who are taking more than 5 to 10 minims, which is certainly too small a quantity to be of decided value in the management of the tubercular; these small doses do a little good where there exists a feeble digestive apparatus, by partially preventing fermentation and thereby assisting digestion, but beyond this, in these small doses any beneficial effect upon the course of the disease is highly improbable. It is only in the large doses of creosote, from 60 to 100 minims three times daily by the mouth, and a local application to the lungs of 15 to 20 minims daily, that we recognize in this drug a well-nigh specific influence in pulmonary tuberculosis.

Creosote is best administered in either cod-liver oil, whisky or cream. Manufacturing druggists in recent years have a fad of combining creosote with many of their wares; it goes without comment that these preparations are of but little benefit, as the quantity of creosote is insufficient and quality questionable. Creosote should never be administered in capsules unless combined with an oil, and then the bulk or number of capsules would be objectionable. I have systematically used creosote subcutaneously in tubercular subjects, without observing any advantage over administering by stomach. One part of creosote to two of oil of sweet almond was the strength used, and in no instance have these injections given trouble. This mode of administering is sometimes admissible when a concentrated local effect of the drug is desirable or where there exists an idiosyncrasy or aversion by mouth.

In all cases of laryngeal and pulmonary tuberculosis, 20 to 25 minims of creosote in some hydrocarbon oil can and should be forced down into the lungs daily.

The drug must always be administered on a full

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