ted, racked with daily exacerbations of pain and constant fever.

On Oct. 6, 1894, during the eleventh week of illness, the patient was removed to the infirmary and on the following morning abdominal section was made. Ether was very cautiously given, and the operation performed as quickly as thorough and careful work would permit. On opening the abdomen (suprapubic) the omentum was found agglutinated to the intestines, roofing in the pelvic viscera. Releasing this and working a track of cleavage with two fingers through the coils of intestines the pus freely poured out of the incision. In separating the adhesions at the floor of the pelvis, and enucleating the disintegrated tubes and ovaries (applying only gentle force cautiously), my index finger penetrated the uterus. Recognizing this, I forcibly released that organ (observing the utmost care not to open the rectum to which it was adherent), and brought it up with the suppurating appendages. The body of the uterus was friable, breaking down under slight force; the appendages were mere abscess sacs. Having separated adhesions so as to release the intestines, I threw a small wire attached to Kœberle's nœud around the cervix uteri, and removed the uterus and appendages. The peritoneum was thoroughly doused with several gallons of warm water, a drainage tube placed, and the incision rapidly closed. The operation was completed in thirty-two minutes. Dr. Guest, the anesthetist, had already administered stimulants hypodermically. The patient was put to bed without any pulse that we could detect in the wrist, though the heart was acting with great rapidity. The usual stimulants subcutaneously, with dry heat to the surface and extremities, were persistently applied, and the patient gradually rallied. The pulse was rapid and small for three days, then gradually improved. The drainage tube was removed on third day, the nœud came away on the eleventh day, and healing was prompt and complete. The patient rapidly gained strength and flesh, and is now a perfect picture of health. Dr. Coleman Rogers and Dr. T. P. Satterwhite were present at the operation.

THE OPEN AIR TREATMENT OF CONSUMPTIVES WHO CAN NOT SEEK CHANGE OF CLIMATE.

Read at the meeting of the "Tri-State" Medical Society at St. Louis, April 2, 1895.

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The importance of climatotherapy in the treatment of consumption was recognized even by the ancients. As long ago as the time of Hippocrates and his immediate successors it was held that consumptives should be removed to a distance from the locality in which they had contracted their disease. From that day to this, physicians have been in the habit of ordering change of climate for their phthisical patients in the belief that in a judicious and early employment of climatotherapy lies the consumptive's best hope of recovery. Much thought and investigation have been given to the determination of those qualities of climate to which its remedial virtues may be attributed. These would seem to be dryness, high altitude, equability and purity. Yet that dryness and high elevation are not fundamental requirements for

all cases, is shown by the fact that some patients do well in sea stations such as the Island of Madeira. Equability of temperature can not always be relied on at resorts of greatest repute, such as those of mountain climates. The one quality common to all well known and justly celebrated resorts is purity of the atmosphere, and when combined with dryness and low atmospheric pressure, of mountain resorts, we have those qualities most conducive to recovery from pulmonary tuberculosis. Nevertheless, some patients recover who never seek a high altitude; others, who never leave home. And those who seek the most favorable climate possible receive little or no benefit unless they remain out of doors a large proportion of the time. Furthermore, Dettweiler, from his Sanitarium at Falkenstein, Germany, reports from 24.5 to 27 per cent. of recoveries of patients in all stages. And yet his institution is located in the cool, damp, changeable climate of Germany in the Rhine country. Similar results are achieved at Bremer's Sanitarium in the equally unfavorable climate of Görbersdorf, North Germany. Surely then, there must be something more than mere removal to a favorable climate if the consumptive would recover, and on the other hand there may be some hope for the consumptive who can not seek change of climate. This condition upon which depends the welfare of the phthisical patient, whether at home or at a health resort, is life in the open air.

Consumption may be said to be the disease of indoor life. Its victims are those forced by occupation or circumstances to spend their days within four walls. It rarely attacks persons who work in the open air, unless their health be undermined by vicious habits or conditions of environment that antagonize the beneficial effect of their outdoor life. While penning the foregoing sentences I was consulted by a lady of tubercular family history, who had developed pulmonary disease within a few weeks previous, largely I believe in consequence of having exchanged residence in South Dakota with much time spent out of doors, for the opposite conditions of life in Chicago. Such facts are so numerous as to point unmistakably to the disastrous consequences of indoor confinement. Why then should this, Nature's remedy, fresh air, be withheld from individuals already suffering from pulmonary tuberculosis? And yet this is precisely what is done in only too many instances.

Last fall I was consulted by a young lady with pronounced pulmonary tuberculosis, whose physician had warned her against going out doors, lest she should take cold. It is not at all uncommon to find the consumptive in an advanced stage with all the phenomena of sepsis, lying in an overheated, ill-ventilated apartment from which he is never moved.

Therefore I desire to lay down two following propositions: 1, a consumptive who can not seek change of climate should pass his days in the open air, no matter what the stage of his disease; 2, under proper precautions this may be done in all weathers, excepting the severe cold of winter, when the thermometer registers below 15 degrees above zero.

And now I propose to devote the remainder of this paper to the description of how and why this should be done.

In the summer of 1893 it was my good fortune to be able to visit Dettweiler's famous Sanitarium at Falkenstein, where the open air treatment of consumptives is carried out in its perfection and with truly brilliant

results. The institution is situated at the altitude of about one thousand three hundred and fifty feet above the sea, and is protected from cold northerly winds by the low Taurus Mountains, among which it lies. It is constructed around three sides of a square, so that its galleries face the southeast, and obtain all the sunshine possible. In these open galleries, protected from the elements only by canvas curtains, the patients spend the entire day from eight to ten hours, reclining in easy chairs or on couches and covered by sufficient rugs to withstand the cold. This open air treatment is so generally employed, that according to Dettweiler's figures all but $8\frac{1}{2}$ to $9\frac{1}{2}$ per cent. of the patients were submitted to it, winter and summer, during the year in which his statistics were collected. The patients are taken into the fresh air about 11 o'clock A.M., after they have had their breakfast and as a rule are not brought in again until 9 or 10 o'clock in the evening. Their meals are served out of doors and they while away their time by conversation, reading, playing games, etc. The range of winter temperature during which Dettweiler reports this treatment as carried out was between 12 and 41 degrees above zero, F., and it was not deviated from because of rain, wind or snow, since the patients could be sufficiently protected by the canvas curtains. Very feeble patients are taken out and kept in their beds, those suffering from high fever are kept in the open air until daily defervescence sets in, when they are returned to their rooms. The small percentage of those not subjected to this treatment were invalids suffering temporarily from complications.

Marked benefit is said to be observed, such as diminution of fever, cough and expectoration, cessation of sweating, lessened nervousness, return of appetite and digestion, and gain in strength and weight. Physical rest in the open air in the manner described is insisted upon so long as patients have marked fever and wasting. When sufficiently improved, they are allowed to take exercise cautiously, walking at first but five minutes at a time; the amount of exercise permitted being gauged by the effects. If rise of temperature result, no matter how brief the exercise, they are again subjected to rest. The most careful attention is paid to diet, and in all respects they are managed in accordance with the most approved principles of clinical and symptomatic treatment and individual peculiarities.

Certain precautions are necessary in subjecting a consumptive patient to a mode of treatment not only vigorous but at the same time wholly at variance with what he has been accustomed to. He is notoriously sensitive to cold, partly in consequence of anemia, perhaps, but largely because of exaggerated reflex sensibility on the part of the nervous system. The moment a breath of cold air strikes his body, reflex contraction of the cutaneous vessels takes place and he complains of chilliness. This is intensified by his fear of cold air, which makes him shun exposure and prefer a temperature of enervating warmth. Indeed, his sensitiveness to drafts is so exaggerated, that as Dettweiler observes, he may be said "to have a disease of the skin as well as of the lungs." Nevertheless, inasmuch as the *pars minoris resistentiv* is the pulmonary mucous membrane, a chill may at any time result in congestion if not actual inflammation of the lower respiratory tract. Consequently if a patient is to be subjected to this open air

treatment, he must undergo a hardening process to deprive him of his abnormal sensitiveness; that is, he must be gradually accustomed to cool air and drafts without feeling cold. This may be done by friction of the surface, movements of the body and the adjustment of additional clothing. The patient must be exposed to cool air until he begins to experience a sense of slight chilliness, when an attendant must at once begin to rub him briskly to anticipate and prevent its intensification into a pronounced rigor. Sometimes it may suffice to shift about on the couch and move the extremities, or for the attendant to cover him up more warmly with additional wraps. Furthermore, such a sensitive patient should not be taken out of doors in the early morning hours at a time when chills are most easily induced, but toward noon, say 11 o'clock, after he has had his breakfast and the body temperature has begun its diurnal rise. If in spite of these measures a chill and consequent bronchial congestion or inflammation result, the patient must be at once taken to his room and there subjected to a reactionary or revulsive treatment. This consists of dry friction underneath the clothing in such a way as not to subject the patient to still further exposure. Hot drinks should be given, counter irritation applied to the chest and the rubbing continued until the surface is in a vigorous glow. Then if fever comes on with other symptoms pointing to the patient's having taken cold, in spite of the measures to ward it off, he should be confined to his room until all active symptoms abate. He may then again be taken into the open air and be put through the former régime. As a consumptive improves in strength and endurance he may be subjected to morning sponge baths with cool water or diluted alcohol, followed by vigorous friction, and thus gradually become prepared for even so energetic a measure as the cold douche or shower bath. His sleeping apartment should be kept thoroughly aired while the invalid is out of doors, and fresh air in abundance should be admitted, even at night, through an open window either in the same or an adjoining chamber.

Such is the outline of the treatment advocated for consumptives not permitted by circumstances to seek a change of climate. It only remains to describe briefly a practicable method which the general practitioner can carry out in the case of a private patient. In the country or in a town, the air of which is not contaminated by dust and smoke as in a large city, a piazza, so situated as to get the sun, can be utilized for the purpose. By means of canvas curtains or screens the invalid's couch can be sheltered from rough winds and storms. If there be not a convenient veranda, a tent can be pitched or a rough shed built at the side of the house, least exposed to assaults from the weather. In case the consumptive be too feeble to be actually taken out of doors he may occupy a sunny room, whose windows are kept wide open. During the coldest days of winter the temperature of the apartment may be moderated by artificial heat. An open grate fire is the best, but even furnace or stove heat will answer if free from coal gas. A patient in the early stage may be permitted as much exercise in the carriage, in saddle or on foot as he can take without fatigue or rise of temperature. This latter is a most important point and his temperature should be carefully taken and registered both before and after exercise. If even slight fever result, the consumptive should be compelled to

rest in the open air so long as physical effort is found to induce rise of the body heat. An attendant should be provided and instructed to carefully guard her charge against chilling in the manner previously described. A trained nurse would be perhaps the best, but an intelligent member of the family can be instructed in the duties of the position. But this is not all; the patient himself will generally require mental as well as physical treatment. He must be made to understand the necessity of the baths, frictions and douches calculated to harden his skin, also why rest, instead of exercise may be required, and he must be taught not to expect striking results at first. The consumptive is either apt to be easily discouraged if he does not perceive immediate results, or on the other hand to fail of appreciating the importance of, to him, trifling details in the carrying out of a prescribed régime. If the precautions are well observed, the treatment should be carried out rigorously to the extent of even the meals being taken out of doors. In many instances no doubt the prejudice of relatives and friends will have to be overcome, requiring intelligent explanation of the advantages and benefits to be expected. Even in large cities, where a suitable piazza or yard space is not available a measure of the treatment can be carried out in some room selected for the purpose. "Half a loaf is better than no loaf," and if the physician can not secure everything desirable in this mode of climato-therapy, he may yet improve on the overheated, ill-ventilated atmosphere in which so many hectic patients are consumed. There is nothing in this plan that militates against other rational means of treatment. In fact, everything medicinal, dietetic and hygienic, conducive to recovery, should be utilized. Symptoms will not disappear at once or even rapidly, but most of them particularly the fever will be favorably influenced. If the invalid continues to perspire freely his nurse should dry him by prolonged friction under the clothing. His appetite should be encouraged and his dietary carefully supervised each day. Consumption is a mixed process; destruction of pulmonary tissue on the one hand with the phenomena of septic infection, on the other. There is consequently abnormal metabolism of tissue, calling for greater intake of oxygen, yet there is deficient lung capacity to meet the demand for increased oxydation and hematosi. Is it not rational therefore that the consumptive be placed in such an environment, as will best fulfill the needs of his organism? The statistics at Falkenstein and Görbersdorf furnish the answer.

Venetian Building.

A CASE OF OBSTRUCTION OF THE BOWEL FOUR DAYS AFTER ABDOMINAL SEC- TION—SECONDARY OPERATION— RECOVERY.

REMARKS ON PERITONEAL ADHESIONS.

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Mrs. G., age 37, living in Huntington, Ind., was brought to my Sanatorium by her physician, Dr. Charles W. Wright, Feb. 15, 1895. She was the mother of two children, aged re-

spectively 13 and 6 years. Had been an invalid since the birth of the younger child. She complained of backache, headache, pelvic pain, indigestion, leucorrhea, dysmenorrhea and insomnia. Her appetite was good, but on account of gastric irritability she could rarely consume a good meal. She was emaciated and extremely nervous. Bowels constipated, vesical irritability.

Pelvic examination discovered a sharply retroflexed uterus bound down by adhesions; and an enlarged prolapsed ovary, pressure upon which elicited exquisite pain. Measurement of the uterus showed a longitudinal diameter of three and one-half inches. After one week's preparatory treatment, abdominal section, with the assistance of Drs. F. B. Wynn, Martha J. Smith and S. E. Crose, was made Feb. 22, 1895. The right ovary was adherent to a coil of intestine, three times its normal size, chronically inflamed, and a number of cysts were scattered over its surface. The corresponding tube enlarged and inflamed. Left ovary and tube healthy in appearance.

The adhesion between the ovary and intestine was carefully separated, a ligature of chromicized catgut adjusted as closely as possible to the cornu of the uterus, and ovary and tube severed with the thermocautery. The stump was thoroughly charred with the cautery and dropped. The uterus was then brought forward, after separating the adhesions, and sutured to the abdominal wall, after Pozzi's method. The incision was closed by six silkworm gut sutures. The operation was completed within a half-hour and the patient put to bed in good condition.

The progress of the case was satisfactory in all respects until the following Sunday evening, (four days after the operation) when symptoms of intestinal obstruction made their appearance. The patient vomited several times and had paroxysmal pain in the right ovarian region. Several efforts which failed, were made during the night to procure an evacuation from the bowels by rectal injections. On Monday morning the patient expressed herself as feeling better and took some nourishment which she retained; pulse 120; temperature 99.5 degrees F. There was tenderness upon pressure over the right ovarian region, but no tympanites or tenderness of the abdomen. During the day a saline cathartic was given, followed by rectal injection, but no movement was secured. In the evening, nausea and vomiting again supervened, paroxysmal pain increased, which was relieved with morphia hypodermatically; the pulse mounted to 140, temperature 103 degrees F., and the abdomen became rapidly tympanitic. During the night she was given 10 grains of calomel in divided doses and three doses of Rochelle salts which she retained. This was followed in the early morning with high rectal injections, but the bowels obstinately refused to respond.

Condition Tuesday morning at 10 o'clock. Temperature 99.5, pulse 140; abdomen greatly distended and interfering with breathing. She is very weak but has not that haggard expression of countenance invariably noticed in peritonitis; still complains of colicky pain in the right ovarian region. Inspection of the abdomen revealed several coils of the small intestine in active vermicular motion, which convinced me that I had been in error in attributing the obstruction to paresis of the bowel. It evidently arose from adhesion, most probably between the stump and intestine.

During the day she was given, hypodermatically, every three hours, 1-30 grain strychnin and 1-100 gr. digitalin. A rectal tube was passed several times as far as the hepatic flexure of the colon, and injections given of turpentine emulsion, hot water