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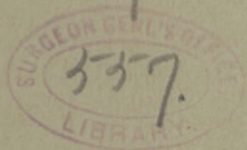
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OR CLOSED TREATMENT
OF PHTHISIS.

BY
EDWARD O. OTIS, M. D.,
BOSTON.

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THE SANATORIUM OR CLOSED TREATMENT OF PHTHISIS.*

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THE open and the closed or sanatorium treatment of phthisis may not inaptly be compared, I think, to the treatment of a private patient before and after the advent of the trained nurse. With the accurate, intelligent, and skillful ministrations of the nurse, the prognosis for the patient is appreciably improved, other things being equal. In like manner, with the resources and expert service of a sanatorium the percentage of recoveries has been found to be considerably greater than under the most favorable conditions in the open resorts. Besides this chief advantage of better results in the closed treatment there are others which are not inconsiderable, and to them I shall refer directly. All of us who see and treat many cases of phthisis, either in the large centres of population or at the various health resorts, must, it seems to me, have become profoundly impressed, not to say depressed, by the fact that the results obtained

* Read before the American Climatological Association, at Lakewood, N. J., May 13, 1896.

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by the open treatment, so called, even under the most favorable environment, are greatly inferior to those produced by the closed treatment, as illustrated by the best sanatoriums abroad and the few existing in this country. Of one thousand and twenty-two cases treated by Dettweiler, at Falkenstein, from 1876 to 1886, there were 24.2 per cent. of complete and relative cures—and by relative cure is meant an appearance of good health, with good action of all the organs, especially the heart and lungs, but where there are some physical signs still remaining in the lungs.

Meissen, in his sanatorium at Hohenhonnef, gives twenty-seven per cent. of cures. In Dr. Trudeau's last report of the Adirondack Cottage Sanatorium, of ninety-one patients who remained from three to forty-four months, nineteen incipient and advanced cases were apparently cured, and twenty-six incipient and advanced cases arrested; in reports of other years he exhibits equally good results. Rompler, at Görbersdorf, gives twenty-five to twenty-seven per cent. of cures. Von Ruck, at Asheville, reports thirty-five per cent. cured or permanently arrested; forty-six per cent. improved. Turban, at Davos, reports forty per cent. Knopf gives statistics from fifteen sanatoriums, either visited or communicated with by him, representing forty-five hundred patients; six hundred and thirty, or fourteen per cent., were absolute cures; six hundred and thirty, or fourteen per cent., relative; and eighteen hundred and ninety, or forty-two per cent., improved. The more intimate our knowledge of the disease and the multiplicity of its pathological conditions, and of the character of the average phthisical individual himself, the more hopeless seems the task of properly treating him, under however favorable a climate, without absolute control both of his body and of his mind. "It is upon a multitude of small details most

frequently that the cure depends. In appearance they may seem trifling, but in reality they are of capital importance." The treatment, in a large measure, must consist in causing the patient to give up his bad hygienic habits and replacing them by good ones. The phthisical patient is a sick entity, sick in body and mind. He distorts the true relations of things, and when left to himself frequently acts disastrously from this distorted point of view. His moral and mental condition requires a vast deal of study and observation, which is only possible when he is immediately and constantly under his physician's eye. You, who practise in health resorts, I think, will corroborate these statements, and could doubtless adduce many cases in your own experience as illustrative of them. "A consumptive," says Léon-Petit, "given up to the care of those about him will be at the mercy of anything that may happen. In spite of the frequent visits of his physician, he will have to contend with his own peculiar weakness; he will commit with the best of intentions the gravest faults. His establishment may be perfect and the climate irreproachable, but he lacks the principal factor of treatment, without which all the others are rendered powerless—namely, the guide which he feels watches him constantly, in whom he has confidence, and who knows how to remove from his path the obstacles which can cause him to stumble." It is emphatically the case, as Dettweiler says, that the individual *in toto* has to be treated, and the moral education is quite as important as the bodily treatment. A consumptive is in a peculiar mental condition as a rule, possibly not different from that which is the concomitant of any chronic depressing disease, but which renders constant supervision and inspiration necessary. He lacks perseverance and power to concentrate the mind and will upon a definite object. In brief, as some one has said, a typical

case of phthisis embraces little less than the whole field of pathology.

Moreover, with our present knowledge of the contagiousness of the disease, we must all agree, I am sure, that the sanatoria or special hospitals are the best means of protecting the non-tuberculous. We must reckon with the fact that the people are becoming educated to this new truth, and it will become more and more difficult to properly care for our consumptive patients, either at home or in the health resorts, where both non-tuberculous and tuberculous patients have been in the habit of congregating, as at Aiken, at Asheville, in southern California, and in various other stations south and west. Those who, simply for a change, or for other maladies than phthisis, resort to these various stations will, as well as the inhabitants themselves of these places, demand that they be protected from the danger of contagion, which is ever present when tuberculous patients are allowed to go free among them. Already hotel proprietors are recognizing this fact and closing their doors to the consumptive. Besides, then, all the other advantages of sanatorium treatment, there will be this other impelling motive of necessity to provide establishments in the health resorts of known reputation for the unfortunate consumptive. The physicians themselves in these resorts, I am sure, realize this necessity, as well as the unsatisfactory condition under which they are now compelled to treat their patients by the open method, and it is to them especially that we of the cities and portions of the country where phthisis so largely prevails must look to inaugurate the era of sanatoriums. We, on our part, must convince our patients of the much greater chances of recovery they have in a well-equipped and conducted sanatorium, and disabuse them of the erroneous ideas they may hold of the life in such institutions.

Whereas climate is a most valuable factor in the treat-

ment of phthisis, as we would all confess, yet I believe that, both by the profession and the laity, its influence has been, if not entirely overrated, at least quite misunderstood. We have been trying to make it do the whole work rather than its own appropriate part. We have looked upon it too much as a specific. A study of the sanatoria abroad makes it evident, I think, that it is not a peculiar variety or even excellence of climate which has produced the favorable results, but rather the admirable *régime* of the sanatorium itself, and the exact precision with which the whole life of the invalid is governed. It is the perfect hygienic environment. All sources of help, climate among them, are made use of, each according to its value. Knopf says, and I think he is right, that if he had the choice of sending a patient who had some prospect of recovery to an ideal climate and altitude in an open station where he would be left free to act as he pleased, or to send him to a closed institution where all the conditions of climate were those of the lowlands, he would send him to the latter, convinced that his chance of cure in a relatively unfavorable climate, with the *régime*, hygiene, and constant supervision of the physician, was greater than in an ideal climate without these advantages which a sanatorium offers. Our medical journals are constantly publishing communications upon the various so-called climatic resorts which, in my opinion, still further promote this misconception of climate—namely, exaggerating its power and influence, and ignoring the vastly greater value of the hygienic treatment in its largest and fullest sense. It seems to me that it is time to make an emphatic protest against this one-sided view of the influence of climate *per se*, and an equally vigorous plea for the advantages of the hygienic treatment of phthisis as represented by the best sanatoriums. I do not wish to be understood as in any sense depreciating the value of cli-

mate, inestimable as it is. It is only that I believe in it so firmly that I desire to see it properly used and not abused through a misconception of its value. The consensus of opinion of all the experts in the treatment of this disease is that hygiene and dietetics come first, and after that climate, altitude, and medication.

There are certain facts and misconceptions regarding sanatoriums which it seems to me well to consider a little more closely. In the first place, there is a fear abroad that sanatoriums may be a source of contagion not only to the inhabitants of the localities where they are situated, but to the inmates as well. As to the fear that sanatoriums tend to spread the disease, we have the evidence to the contrary from both Görbersdorf and Falkenstein, two of the oldest and largest sanatoriums in Germany. Görbersdorf has been visited by twenty-five thousand patients during forty years, and the mortality from phthisis among the inhabitants has never passed the ordinary average, but, on the contrary, has diminished.* During the period of twenty years preceding the establishment of the Falkenstein Sanatorium an average of four per cent. of the inhabitants died annually of consumption, and 18·9 per cent. of the total mortality was attributed to that disease. After the institution was opened, during the period from 1877 to 1894, the average annual mortality from phthisis fell to 2·4 per cent., and the proportion of deaths from consumption to those from all causes sank to 11·9 per cent.† On the contrary, there is reason to believe that in the open resorts consumption has increased among the inhabitants since the advent of phthisical patients. This has been observed at Nice, Cannes, Monte Carlo, Mentone, southern California, and, I doubt

* Rompler. *Beiträge zur Lehre von der chronischen Lungenschwindsucht.*

† Quoted in the *New York Medical Journal*, February 22, 1896.

not, other open resorts. Says the mayor of Nice, in a letter to Dr. Knopf: "It is of public notoriety that at Nice, and especially Mentone, tuberculosis has increased enormously since consumptives have frequented this station." Knowing, as we do now, the contagiousness of the disease and the carelessness of the average consumptive, how could this be otherwise, for among large numbers of consumptives allowed to go free there will inevitably be some who will scatter their sputum about, and then the danger begins. As to the danger of contagion in the sanatorium itself, we have the experience of Görbersdorf, Saranac, Brompton, and others. At the latter hospital, Williams says that during a long service he has observed only three or four cases of contagion among the *personnel* of the hospital. In the three great closed establishments at Görbersdorf, among the attendants, who are taken almost exclusively from the indigenous population—that is, from an outdoor to an indoor life—the mortality is very low in spite of very exhausting work. In an examination of the dust at the City of London Hospital for Diseases of the Chest and the Adirondack Cottage Sanitarium, by Heron and Hance, it was found to be practically free from bacilli. The first and last and constant care in a sanatorium is the proper disposal of the sputum; patients and attendants are taught to realize its danger and the way to protect themselves and others from it; this accomplished, contagion vanishes.

Another common objection to sanatoriums is the depressing effect upon one shut up with so many consumptives. If you suggest sanatorium to your patient or his friends it is not unlikely that they will consider the proposition as an impertinence on your part, and shudder at the mention of such an institution as a sort of Inferno, with "Abandon hope, all ye who enter here," written over it. This attitude of mind comes from the erroneous conception

of a sanatorium, and ignorance of the life within it, together with the desire, perhaps natural enough to average human nature, to conceal from themselves or friends the fact that they have a desperate disease which demands a long and unremitting struggle, aided by the best resources known, to combat it. Those of us who have visited sanatoriums in this country or abroad will agree, I think, that the atmosphere in these institutions is a cheerful one, the patients are generally happy and contented, and the "hope that springs eternal in the human breast" is fanned into a bright and constant flame. One encourages another and is encouraged by seeing others recover, and, if the director or physician is the man for the place and possesses something of the personality which makes the success of the faith-cure doctor, he is a constant inspiration to all. The repose of mind engendered in a sanatorium is most helpful. The patient is made to feel that he is wasting no opportunity, and, what is of inestimable value to a sick man, he is encouraged to give himself up entirely to the guidance of the physician and renounce all responsibility of his case. He is only to follow out from day to day the routine of life which is arranged for him, to do blindly, so to speak, what is told him to do, like school children or athletes training for a contest, a most favorable condition of mind for improvement and recovery. Petit gives the impressions of one of his own countrymen in a German sanatorium. At first it is a sad one, he says, but this is very fleeting, and is replaced by one which is quite the opposite—a deep serenity of mind begotten by the hope of cure. Thanks to this serenity, the invalids joke and laugh the entire day. "It is hope," adds Petit, "which enters the sanatorium, and it is hope which lodges there."

The educative value of a sanatorium is an important part of its influence. It is no small advantage to train the

patient in proper methods of personal hygiene, so that when he enters the common life again he may be able to so care for himself as to avoid the dangers he once fell into by his faulty hygiene. And further, he will also be a teacher to others by precept and example, and show them how to avoid the conditions conducive to phthisis. Upon the consumptive at large and his entourage he will impress the danger of carelessness in disposing of the sputum. We should regard, I think, sanatoriums as most valuable allies to the conservators of public health in disseminating the knowledge of the danger of the sputum and the means of protection from it, and it is well for us to acknowledge our indebtedness to them.

The educative value of the sanatorium upon the side of its material for clinical study and its laboratory for the investigation of problems in tuberculosis is highly important. Consider the work of Brehmer and Williams, Dettweiler and Powell, Sabourin and Petit. In our own country we must all acknowledge our obligations to Dr. Trudeau for the work he has already accomplished in the Saranac Laboratory, and we have the new laboratory at the Winyah Sanatorium from which to expect valuable results. If special training is necessary for the physician who would direct a sanatorium or devote himself to the treatment of phthisis at large, the sanatorium is the natural school for such training. Dettweiler was a pupil of Brehmer's and Meissen of Dettweiler's. Moreover, many therapeutic problems, the testing of the value or worthlessness of any vaunted drug or method of treatment, can find in such an institution most favorable conditions for their solution. The advantages to the patient in the way of costly equipment the large plant of a sanatorium offers can not be so completely obtained in any other way, I believe; the sanitary arrangements, cleanliness, ventilation, preparation of

food, heating, facilities for various kinds of baths and massage, means of physical culture and breathing exercises, location so as to command the greatest amount of sunshine—all these and others, when dominated by an expert, produce a combination of favoring circumstances rarely if ever possible in an open resort.

There are many details regarding the establishment of sanatoriums which it would be of interest to consider, had one time: the location, climate, altitude, capacity, method of housing, either in a number of small buildings, as at Saranac, or in one or two large ones, as at Görbersdorf and Falkenstein; my thesis, however, is a plea for the greater advantages and better results of the closed treatment rather than a discussion and review of sanatorium location, construction, and management.

I will, however, say a word or two regarding the question of climate in relation to the location of the sanatorium. With reasonable regard for other considerations, such as accessibility, facility for obtaining supplies, a near source of good and abundant water, etc., the next consideration should be given to climate, and that resort should be selected which offers the most favorable climatic conditions for the open-air treatment: a pure atmosphere, a majority of pleasant and sunny days, dryness of soil and air, and more or less equability of temperature. The medium and high altitudes have given the best results, and, other things being equal, are to be given the preference in the location of the sanatorium. All of those in Europe, with the exception of the three at Davos, Leysin, and Arosa, in Switzerland, are of the medium altitude class—averaging about sixteen hundred and sixty-seven feet. Nearly all of them, however, are situated in the mountains, and possess a mountain air, rather dry, with no sudden or considerable changes in temperature, and fairly abundant

sunshine. There are, however, I believe, cases enough more suitable for the lowland climate—Gedding's "aseptic climate without altitude"—as well as those who would do as well there as anywhere, to warrant the construction of sanatoriums in these localities, represented by such places as Lakewood, Aiken, Thomasville, and southern California. It is well to repeat in this connection that climate and altitude are only more or less favorable allies, only a part of the *tout ensemble* of the treatment of phthisis, and not the *tout ensemble*. Better results are to be expected from sanatorium treatment in a mediocre climate than from the open or free treatment under the most perfect climatic conditions. "Wherever they are situated," says Sabourin, "analogous results are obtained. The tuberculous are cured as well in the temperate climates as the cold ones. Altitude plays only a secondary rôle in the cure. The best proof of this is that the most excellent results are perhaps obtained at Falkenstein, a station of only an elevation of thirteen hundred and seventy-eight feet, and whose atmosphere is a little misty or foggy. It has often been said," he continues, "and it is well to repeat it, that a climate does not exist which cures phthisis, but there is a curative method which is applied in a more favorable manner perhaps in one climate than in another. The superb results obtained in the sanatoriums of medium altitudes show that they respond to the indications of a majority of the cases which present themselves."

Are there no cases, then, for which the open treatment is better adapted? one naturally asks. Yes; if one could be psychologist enough to make the selection. Such patients should possess sufficient strength of will, tenacity of purpose, and mental acuteness to comprehend and faithfully and perseveringly carry out a *régime* carefully arranged and supervised for them by a skilled physician close at hand,

and further, their environment should be able to furnish the requisite means for accomplishing this. As a fact, however, I think most of us would agree that such a happy combination of traits and conditions was not frequent, and we can never be sure of knowing with any degree of confidence when it does exist. Consider a moment the requirements: a pure and wholesome atmosphere and constant exposure to it; the best possible hygienic conditions; protection from a new infection either by self-infection or from some other careless patient; good nourishment, with a wholesome, abundant, varied, and attractively served table, the food being especially prepared if the condition demands it, to be constantly under the eye of a specialist in this disease. Facilities for proper physical exercise, when allowable; also for hydrotherapy and massage. Conditions such as will excite hope and secure tranquillity of mind, and promote co-operation in the exertions made to bring about the favorable results. Can, now, these conditions be fulfilled with any degree of certainty or completeness in a free station? I doubt if they can. Frémy, quoted by Knopf, favors open resorts only for those who have no need of a rigorous supervision and a methodic treatment; the suspected cases—scrofulous, bronchitics, the predisposed, or those who have hereditary tendencies—but, as Knopf says, for a patient with phthisis in evolution, who can aggravate his state by the least imprudence or fault; for one, the constant supervision of whom, and whose education, physical and moral, constitutes the principal treatment, a closed establishment is the only way in which he can hope for a cure. The treatment in a free station is illusory.

There still remains the important question of sanatoriums for the poor. This is being widely discussed abroad, and already with substantial results, as I shall show directly

in presenting a list of the sanatoriums already established and proposed. For the poor consumptives of our cities—and the majority of them are found there—two classes of sanatoriums or special hospitals will be found necessary, I think: the one in or near the city, to receive the tuberculous of all stages; the other in the country, under more favorable climatic conditions, to receive such cases from the former as are suitable for the climatic cure and who have the most need of its influences. When once the public realizes the value and economy as well as protection that such provision for the poor consumptives will effect, they will not be slow to follow the example of the only state which has, as yet, made such beneficent provision.

Ultimately the state has to provide refuge in its general hospitals, poorhouses, and asylums for the consumptive when he is too ill to work longer. Here he is a menace to the other inmates, and receives little, if any, special treatment, although the expense *per capita* is probably larger than it would be in a special hospital. The favorable results are, moreover, almost nothing, while with the special treatment in sanatoriums many lives would be restored to the working community, which would mean a great economic gain.

As illustrative of the subject, I have endeavored to collect a list of all the sanatoriums now existing in Europe and this country, with a few facts relating to them. I have a list of thirty-three—probably there are more at this writing—great and small, scattered throughout Europe, and most of them at a medium altitude. The three in Switzerland are of high altitude, and those in London, at the Isle of Wight, and the little one in Scotland, are at sea level, as also, I suppose, those, or most of them, in Russia are. Twenty are paying more or less, and thirteen are charitable. Their capacity varies from two hundred and fifty to fifteen.

Sanatoriums for

NAME.	Situation.	Elevation.
Sanatorium of Brehmer	Görbersdorf in Silesia.	1,840 feet.
Sanatorium of Rompler	" "	1,840 "
Sanatorium of Countess Pückler	" "	1,840 "
Sanatorium of Falkenstein	Falkenstein in the Taunus.	1,378 "
Sanatorium for the Poor at Fal- kenstein.	" " "	1,378 "
Sanatorium of Davos	Davos, Engadine Valley (Switzerland).	5,159 "
Sanatorium of Hohenhonnef . . .	In Honnef, between Linz and Bonn.	774 "
Sanatorium of Reiboldsgrün . . .	Reiboldsgrün, between Saxony and Bohemia.	2,461 to 2,625 feet.
Sanatorium of St. Blasien	Black Forest.	2,534 "
Sanatorium of Badenweiler	"	1,378 "
Sanatorium of Nordrach . . . . .	"	.....
Sanatorium of Schomberg	"	2,132 feet.
Sanatorium of St. Andreasberg.	Hartz Mountains.	1,968 "
Sanatorium of Rehburg (two small sanatoriums).	.....	492 "
Sanatorium of Neu-Schmecks . .	Austria-Hungary, Carpa- thian Mountains.	3,293 "
Sanatorium of Tonsaasen	Norway.	1,968 "
Sanatorium of Leysin	Switzerland.	4,756 "
Sanatorium of Arosa	Engadine.	6,188 "
Sanatorium of Weissenbourg . . .	.....	2,919 "
Sanatorium of Canigou	France, Verne-les-Bains.	2,132 "
Sanatorium of Craigleith	Scotland, near Edinburgh.	Sea-level.
Royal National Hospital	Ventnor, Isle of Wight.	"
Sanatorium of Brompton	London.	"
Sanatorium of Victoria Park . . .	"	"
Royal Hospital for Diseases of the Lungs.	"	.....
North London Hospital for Con- sumption.	"	Sea-level.
Sanatorium of Alexandra	Russia, St. Petersburg.	.....
Sanatorium of Obouchowsky . . .	" "	.....
Sanatorium of Alexandrina . . . . .	.....	.....
Sanatorium of Finland	Halila, Finland.	.....
Sanatorium of Slavonta	Russia.	.....
Sanatorium of Ialta	Crimea, Russia.	.....
Hospital de Wola	Near Warsaw, Poland.	.....

Phthisis in Europe.

Director.	Paying or non-paying.	Treatment.	Capacity.
Achtermann.	Paying.	Brehmer.	250
Rompler.	.....	“	100
Weicker.	Small am't.	“	30
Dettweiler.	Paying.	Brehmer-Dettweiler.	150
“	Non-paying.	“	28
Turban.	Paying.	“	60 rooms.
Meissen.	“	“	Largest in Germany.
Wolff.	“	“	100
Haufe.	“	“	60
Leiser.	“	Not exclusively for phthisis.	
Walther.	“	.....	34
Bandach.	“	.....
Jacobash.	“	Brehmer.	
Michaelis,	“	“	15-20
Kaatzner.	“		
Seontagh.	“	<i>Cure d'air</i> and hydropathic; open only in summer.	
Anvord.	“	.....	90
Burnier.	“	Usual hygienic.	130
Ewart.	“	Brehmer-Dettweiler.	40
.....	“	<i>Cure d'air</i> only; hydropathic; summer.	Mixed.
Sabourin.	“	Hygienic: <i>cure à l'ombre</i> . Does not lodge patients.	
.....	Non-paying.	<i>Cure à l'air libre</i> .	15
Dr. Philip.	Partly charitable.	Eclectic.	134 beds.
.....	Non-paying.	“	137
.....	“	“	164
Dr. Buchanan.	“	“	
.....	“	“	84
.....	“	.....	100
.....	“	.....	150
.....	“	.....	50
Dr. Gabrlowitch.	“	.....	100
.....	.....	One villa devoted to phthisis.	

So far as the results are attainable, they are about the same for all—of absolute and relative cures, from twenty-five to thirty per cent.; of improved, forty per cent. or more; or the total minimum of absolute and relative cures and improved, seventy per cent., as calculated by Knopf from forty-five hundred cases. The average duration of residence was from seventy to ninety days.

Besides the sanatoriums already established in Europe, which I have enumerated, there are numerous others, either in process of construction or contemplated, principally for the poor. Switzerland has been especially active in this work. The Canton of Bern has quite or nearly completed one in the village of Schevendi, overlooking Lake Thun, with a capacity of fifty. The Canton Glarus has one projected near Braunwald, with a capacity of twelve to fifteen beds; Bâle, two proposed, one of sixty beds near the city, and the other at Davos-Dörfli; Zurich, one of eighty to one hundred beds, the situation not yet selected. At Leysin, in the Cantons of St. Gallen, Aargau, and in other portions of the country, like establishments are under consideration. In Germany a number of special hospitals for consumptives have recently been established or proposed at Bremen, Breslau, Dresden, Hanover, Cologne, Frankfort on the Main, Worms, and Stettin, and two in Berlin. At Ruppertsbain, near Königstein, one, with a capacity of eighty, is nearly or quite completed. In the neighborhood of Vienna a hospital is to be erected for poor consumptives, with a capacity of a hundred beds. In France, at Agincourt and Magny, sanatoriums are projected, or in process of construction.

Some years ago a Mr. M. O. Motschoutkovsky* first advocated the provision of floating sanatoria for people threatened with tuberculous disease, or suffering from its incipient forms, and quite lately he has taken up the subject

* The *Lancet*, April 4, 1896, p. 939.

again with renewed enthusiasm. This zealous hygienist is of the opinion that, sooner or later, his scheme will prove a triumphant success, for, according to his plan, the isolation of a dangerous class can be effectively carried out with very little discomfort to its members, for, by a judicious timing of moves, the sufferers will be afforded an excellent chance of recovery under the best and most favorable climatic conditions. The various anchorages planned have one and all their special seasons, and, as these seasons by no means correspond with each other chronologically, a speedy vessel could easily transport the passengers from one to another, thereby gaining the best results from all. The ships for this service are to be specially constructed, and are to be in employment only during eight or nine months in the year, the remaining time being used to clean and thoroughly disinfect them. Mr. Motschoutkovsky is convinced that no sanatorium in the world could surpass his floating palaces in comfort or salubrity, while, as regards variety and change of scene, there can be no comparison. At the present time the well-known shipowning association, the Austrian Lloyds, is having a large steamer constructed, especially adapted and fitted for the accommodation of invalids in need of fresh air and favorable climate, and the anchorages that so far have been selected are at Corfu, Alexandria, Palermo, Messina, Naples, Tunis, and Malta.

There are also various hospitals or sanatoriums in Europe for scrofulous or tuberculous children, most of them on the seashore.

Belgium has two—one at Middelkerke, with a capacity of three hundred, and the other at Venduyne, of two hundred capacity. Holland, three—at Zandvort, the Hague, and Wyk-sur-Mer. Italy has thirteen sanatoriums of this kind on the shores of the Mediterranean and seven on the Adriatic. Each of these hospitals takes in a year, on an

average, from fifty to three hundred patients. Denmark has the hospital of Refsnaes, which can receive one hundred and thirty sick children. Austria has a marine asylum at Rovigno, near Trieste. Germany, and quite recently Russia, have followed the example of the other countries of Europe. England has the oldest marine hospital for children at Margate, founded in 1796. France has many hospitals for children on the coast; at Cette, Berck-sur Mer, Cannes, Pen Bron, Arcachon, Banyuls-sur-Mer, Cape Breton, Hyères-Giens, Saint Pol sur Mer, Ver-sur Mer; and in the mountains, that of Ormesson, one hundred beds; Villiers-sur Marne, eighty beds; and Forges les-Bains; also one at Peyraube in process of construction. At Davos, in Switzerland, the Sanatorium Fredericianum for young boys with tuberculous tendencies was founded in 1878.

Progress in this country in the recognition of the value and importance of the sanatorium treatment for its consumptives is slow, and but comparatively little has as yet been accomplished. A wider knowledge, however, of the contagiousness of tuberculosis and of the valuable means of protection which sanatoriums offer is influencing the public mind to a greater and greater extent, so that we may confidently expect in the near future that, either through selfishness from fear of infection or from philanthropic motives, both the national and State governments, as well as individual beneficence, will be active in promoting the establishment of such institutions. In order to obtain as accurate information as I could, I addressed communications to the State boards of health of all the States, and from a majority of them I have received replies. I find that Massachusetts is the only State that has made any public provision for its poor consumptives, having appropriated last year by legislative enactment \$150,000 for a special hospital, which has been located at Rutland, Worces-

ter County, one of the highest points in the State. Of the sanatoriums established by private means as business enterprises or by philanthropy, there are but a few that can be strictly so called. The Adirondack Cottage Sanitarium at Saranac Lake, in the Adirondack Mountains, New York, is a monument to the indefatigable exertions and skill of Dr. E. L. Trudeau, who is its director. This is partly charitable, and is within the reach of persons of moderate means. It has a capacity of about seventy-five. The Winyah, at Asheville, N. C., under Dr. Von Ruck and Professor Klebs, for paying patients, has a capacity of about a hundred. The Sharon Sanitarium, at Sharon, Mass., under the direction of Dr. V. Y. Bowditch, has a capacity of nine beds. It has as yet no resident physician. The Hygeia Sanitarium, at Citronelle, Ala., open from October to May, under Dr. J. G. Michael and Dr. A. C. Klebs, for paying patients, has a capacity of about fifty. There are several other institutions scattered about the country for the reception of phthisical patients, but which can not be strictly classed as sanatoriums: the so-called Home in Denver, established by the Rev. F. W. Oakes; the Glockner and Bellevue, at Colorado Springs; the Lyndhurst Sanitary Homes, near Denver; a small private institution at Boerne, Texas, not exclusively, however, for consumptives; a Home for Consumptives at Chestnut Hill, near Philadelphia; the Rush Hospital for Consumptives and Allied Diseases, in Philadelphia. The House of Rest for Consumptives, forty beds; St. Joseph's Hospital, three hundred beds; the Dispensary for Consumptives, twelve beds—all in New York city. The Seton Hospital, Spuyten Duyvil, New York city, has one hundred and twenty beds and thirty private rooms.

The Free Home for Consumptives, twenty-seven beds, and soon to be enlarged to one hundred beds, is in Dorchester, Mass. One at Liberty, Sullivan County, N. Y., is

soon to be opened, and one near Paul Smith's, Adirondack Mountains, under the charge of the Sisters of Charity, is to be opened within a few months. In Canada one is projected in the Laurentian Mountains; it is to be a national sanitarium and to be built upon the cottage plan.

Through the efforts of the Invalid Aid Society of Boston a bill was introduced into the United States Senate by Senator Gallinger, of New Hampshire, granting to the Society the abandoned Fort Marcy military reservation in New Mexico, for the purpose of a national sanitarium for the treatment of pulmonary disease. Senator Gallinger writes me that the bill is now under consideration by the Committee on Public Lands of the House of Representatives, having passed the Senate; he adds that he has strong hopes that it will become a law. Fort Marcy is about seven thousand feet in altitude, contains seventeen acres, and has good buildings. Fort Union reservation in the same State has also been obtained for a private sanatorium for the exclusive treatment of phthisis. In the report of the Governor of New Mexico for the year ending June 30, 1895, Dr. Francis Crosson, who makes the special report upon the climate of that region, states that plans are now almost complete for the erection of a large sanatorium, to be located either at Santa Fé, Las Vegas, or Ojo Caliente, by a syndicate of physicians of St. Louis, to carry out Dr. Paul Paquin's new treatment of consumption by "immunized serum." He also adds that establishments of a similar character are now in contemplation by the Masonic and Odd Fellows' fraternities.

It seems to me that it is to be deplored that the main object of all sanatorium treatment—namely, the hygienic—should in any way be obscured in these laudable attempts to establish special institutions for the treatment of consumption by the more specious claims of special methods

of treatment or specifics. It is well to again repeat that up to the present time there has been discovered no specific which will cure consumption, and the best results have been, and are now, obtained by the hygienic, open-air treatment, as illustrated in the best-equipped and conducted sanatoriums. The extraordinary and unexpected, like the X rays, may at any time happen in the discovery of the devoutly desired specific or immunized serum; but when it does come, if ever, there will still be as great a need of sanatoriums as at present, where the damage left in the wake of the dislodged and routed bacillus and his confrères can be repaired, and the battered body gently and skillfully restored for further service.

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