OCCUPATIONAL THERAPY AS APPLIED AT EUDO­
WOOD SANATORIUM

MARTIN F. SLOAN

In order to establish an historical medical background for
my remarks on occupational therapy at Eudowood Sanatorium,
which is the same fundamentally as is used in all well rounded
sanatoriums, I would call your attention to some of the con­
ceptions of pulmonary tuberculosis and its treatment which
prevailed as late as the last quarter of the nineteenth century.

In the absence of pathological information concerning this
disease little was known of the exact relation of cause and effect
and the mere name consumption indicated that the disease was
considered primarily from the standpoint of its obvious symptoms,
namely, emaciation, muscular weakness and reduced energy.
The logical treatment as seen by observers of that period was to
offset these effects by oversupplying the tissues of the body with
the elements so rapidly being consumed and to restore by stimu­
lation and coercion the slowly declining strength and energy of
the patient. The fundamentals of treatment were: a sojourn
in the mountains or the arid West for a period of six months or
more where a maximum of fresh air and sunshine were avail­
able; milk and eggs forced to the capacity of the individual
digestive organs; alcoholics, the amount to be governed also by
individual capacity and taste, and exercise uncontrolled. Tersely,
the medical and lay advice to the victim regardless of the
stage of the disease and indifferent to his financial resources was
reduced to the well known injunction, "Go West, drink plenty
of whiskey, and rough it."

1 Read at the fifth annual meeting of the National Society for the Promotion
of Occupational Therapy (now the American Occupational Therapy Associa­
tion), held in Baltimore, Maryland, October 20-22, 1921.
With the development of medical science and scientific apparatus, the pathology and pathological physiology of consumption were better understood. One of the first results was to change the name of the illness from a vague and deceptive one to the more correct and euphemistic one of tuberculosis. Eventually a more rational therapeutics was developed but even at this date we find the faith of many pinned to the terse advice of years ago (though some have omitted going West), which Dr. Marcus Patterson of England, the founder of the modern school of graduated exercise as applied to the tuberculous, would term a "shibboleth."

Today the principles of treatment based upon a knowledge of the pathology and physiology of tuberculosis are: (1) immobilization of the lungs as far as possible; (2) conservation and development of the natural resources by forced rest of the body and the judicious supply of food and elements; (3) promotion of a favorable mental attitude; and, (4) after the inflammation has subsided, restoration of functional and economic capacity. Climate and elevation have a relative value; sufficient nourishment is essential; contentment is imperative, but rest of the body is compulsory.

I hope all will get the full force of the statement, "When pulmonary tuberculosis is in an active state rest is of paramount importance." Rest in the far West; rest on the mountain top; rest on a porch in the suburbs, rest in a room in the city if it cannot be obtained otherwise. Pulmonary tuberculosis is a stubborn inflammation involving the delicately constructed lung tissue and through the blood stream it bathes the entire body with its products and its germs—the tubercle bacilli. Movement of inflamed tissues wherever located in the body irritates inflammation, keeps it active and jeopardizes health and comfort. Therefore, immobilization of the diseased area is one of the first protective laws of nature and of man. We have a forcible demonstration of the application of this law in the case of a man with a boil on his neck—his head is held as rigid as a post. The lowly boil is analogous in principle to the inflammation excited by tubercle bacilli. Movement means continued
inflammation but fixation produces subsidence and less discomfort. The lungs in health with the body at rest contract and expand sixteen times a minute to supply all the tissues with oxygen and help rid them of carbon dioxide. Respiration accelerates in proportion to the demand made upon the lungs by parts extraneous to them, by the amount of oxygen in the atmosphere and by the area of the lungs functioning. Tuberculosis decreases the aerating capacity of the organ and thus quickens respiration; consequently disease activity increases, inflammatory products surcharge the blood, respiration is accelerated and a vicious circle is established. The first step toward breaking this circle is to keep the patient quiet in bed, thus reversing the sequence of pathological events that have occurred. Not only does this procedure lessen the demand for accelerated respiration but it promotes heat, energy and blood, conservation forces that can be diverted to combatting the disease. Thus inflammation subsides and with it the symptoms of local irritation—cough, expectoration, shortness of breath, pains in chest, and those of systemic toxicity as fever, rapid pulse, insomnia, night sweats, and gastric disturbances. Rest with varying intensity must be continued as long as the healing processes are tender and liable to be injured by motion. When symptoms have disappeared for some time and physical examination shows that the scars of healing are forming and toughening satisfactorily the time has come to assist the body to restore working and economic capacity. The logical way to accomplish this is by the use of graduated exercise or occupational therapy.

The Hospital for Consumptives of Maryland popularly known as Eudowood Sanatorium was reorganized and removed from Baltimore City to a site in Baltimore County near Towson in 1900. It was the first sanatorium in the state and indeed among the first in the United States. Being a pioneer institution and more or less an experiment it was handicapped by a lack of funds. It was the desire of the management to return the patients to their homes restored to their working capacity in so far as possible as well as with disease arrested. This, however, entailed the extra expense of keeping them through a period
of reconstruction which had not been figured on in the beginning. There was also the problem of keeping the patients contented during this extra time. After some experimentation a very practical and efficient solution was found in the use of graduated work as a therapeutic measure. Chores about the dining room, store room, in the shacks and cottages were carefully studied and translated into terms of physical effort and were listed in consecutive order from the easiest to the hardest grades. All of the patients, men and women, were graded according to their stage of disease and clinical symptoms and were given chores to perform compatible with their strength and convalescence. A bulletin board was placed at the entrance of the dining room and on this board were listed the chores and the names of those expected to perform them. So interested were the patients in changes on this board that it became a source of news and discussion, sometimes heated, at the beginning of each month when routine changes of chores were made. To them it was a practical indication of the progress of their endurance as interpreted by the doctor and if their work were increased they were happy, if it were decreased they were discouraged. The temperature and pulse of all patients were recorded three times daily and guided by this record and other symptoms the workers were moved up and down on the scale of work. Temperature was taken as the chief indication of one's condition as most often it is the first indication of a change for better or for worse in the inflammatory process. A temperature of 99–99.2° indicated close observation; 99.4° indicated lighter exercise; 99.6° meant no exercise; 99.8° permitted him to go to his meals only; and a temperature of 100° (p.m.) sent the patient to bed until it became normal again. Other symptoms local and systemic were given their full value as indicators.

From the humble calling of paring vegetables in the beginning of one's reconstruction, one went through the gamut of household duties to waiting on tables and making beds according to the sex. In season, garden chores were added and sometimes as many as twelve patients were assisting the gardener assorting seeds and vegetables and gathering truck for hospital use.
After experimenting with a large wash pot in the rear of the kitchen, in the summers of 1912 and 1913, an open air canning plant equipped with a five-horse power boiler and a closed kettle was built down on the edge of the garden, and canning was carried on satisfactorily by patients who had either had experience before they entered the sanatorium or got their training while there. Canning was done in this plant from 1914 until 1918 when high wages in the war plants lured our patients to the city before their convalescence was established and we did not feel justified in continuing the operation further with those available. Our banner season was 1917 when the following fruits and vegetables were gathered and canned solely by patients on occupational therapy: Asparagus, 70 pounds; corn, 5838 pounds; peas, 760 pounds; peaches, 2544 pounds; pears, 234 pounds; strawberries, 540 pounds; tomatoes, 1423 gallons.

Our scheme of graduated exercise or occupational therapy was further extended to include vocational training when patients who had passed through their reconstructional period were given paid positions about the sanatorium. For instance, a convalescent physically and mentally suitable was made assistant to a healthy employe and in time when the employe left, the patient if his work had proven satisfactory was given the position. In time the painting, plumbing, carpentry, driving the bus and automobile were done creditably by ex-patients. They also served as housekeeper, night watchman, engineer, orderlies, and maids. A patient employe filling one of the more important positions had one or more patient assistants, according to the character of the work, who might take his place should he by chance suffer a breakdown. Breakdowns did occur occasionally in the sanatorium as they would have done in the city, but with much less frequency and fortunately for the worker, he was among friends who compelled him to give up and chase the cure again. The day-by-day slow evolution of a sick car conductor into a well and working chauffeur or night watchman was compensation for some of the less encouraging experiences of sanatorium administration. It is known that many of the ex-patient employes on leaving the sanatorium pursued their new occupation either in the city, on farms, or in other institutions.
In 1908 our training school for nurses was organized to give proper and adequate training in the care of the tuberculous to those young lady convalescents who desired to adopt such a profession. Another most gratifying result of our sanatorium work was to see these young women regain their strength and health under the careful régime planned for them and many times they far exceeded in endurance than in any work they had ever attempted before. At the end of two years after faithfully performing their duties and all the while acting as an inspiration to others seeking to regain their health, they left us to pursue their profession in other institutions and in private practice in different sections of the country. This was the first organization of its kind in the United States and so far as I know in the world. (The White Haven, Pennsylvania Sanatorium and Phipp’s Institute, Philadelphia, had training schools prior to ours but their pupils were not confined to the tuberculous). In the past ten years every sanatorium of any size in the country has established its nurses training school and most of them on the same lines as ours.

I well recall the early opposition to this plan to train tuberculous women to do the nursing of the sanatorium by directors who feared they would break down and leave the institution without any nursing force; but when it was demonstrated that these arrested cases when given their work in graduated amounts not only held up but actually improved faster in the cheerful atmosphere they produced; the skeptical were convinced and organized their own schools. A sanatorium should be able to provide occupation for at least 10 per cent of its population in this manner. It was our conviction from actual experience that these women who had passed through an attack of tuberculosis were able to inject a sympathy into their work, and bring to it the knowledge born of personal contact that made them much more suitable for the care of the tuberculous than were the nurses trained in general hospitals.

Graduates of these training schools are in demand and are well paid for their services. During the war three of ours successfully passed the physical and professional examination and served with credit in France.
In 1908, also, our farm colony for convalescents was founded. Contiguous to the sanatorium property was a farm of 188 acres improved by a colonial residence and farm buildings, which was leased for the experiment to be tried. The original idea was to train for specialized farm work those men and women who were suitable physically and who might desire to adopt some vocation that would keep them in the country. It was established with the hope that at some date in the near future a well rounded industrial colony for the tuberculous and their families might be developed there. Owing to a lack of sufficient funds and the intervention of war this dream has never come true and we have never been able to organize our agricultural industries in such a manner as to have something suitable for the physical condition of every convalescent desiring to become a colonist. The chores are practically those found about every well conducted farm and include hotbed planting, transplanting, gathering produce, horticulture, poultry, bee, hog, sheep, and rabbit raising with their numerous problems; berrying and fruit culture; grain raising; silo filling; and in some few instances dairying, repairing implements, buildings, and fences, have been and are being done partly by arrested cases. In very few instances have our colonists obtained a degree of physical strength where in the opinion of the supervisor they were able to do all the heaviest chores mentioned and it should be distinctly understood that there are comparatively few tuberculous individuals who can be general farmers, but there are many who can be trained to do specialized farming.

In most cases our "colonists" have done more intelligent and satisfactory work in their field than the average farm hand who as a rule is lazy, shiftless and too worthless to make a good farm hand. A convalescent to become a colonist on our farm must first have the disease quiescent, must show a disposition to coöperate and possess adaptability. At first thought these requirements would eliminate a large number of convalescents who desire the supplementary after care. Sometimes it is necessary to permit a person to go to the colony for a few weeks probation to see if the environment and work will be congenial. As a
rule the life proves interesting and the patient remains. In recent years because of the partial inability to execute original plans through insufficient funds it has been our custom to send a few chronic fibroid cases to the farm, who owing to their open lesions, would be a menace to those of their homes and communities. The disease is thoroughly arrested in these fibroid cases but the individuals are not strong enough to encapsulate completely the tubercle. These chronic cases, after a long period on the farm, in instances begin to lose ground slowly; they are transferred back to the hospital where they are made comfortable until the end. This is a departure from the early policy of the colony to take only those with the most favorable outlook and in a way interferes with brilliant statistical results, but the good accruing to the family and the community by the complete isolation of one chronic fibroid disseminator is incalculable and the worth of a sanatorium is calculated by the preventive work it does in the community it serves and not by statistics. I believe the time is coming when even our lawmakers will appreciate the necessity of forcibly isolating these chronic disseminators in comfortable quarters, and where can a better place be found than a farm colony?

Time does not permit me to relate the many thrilling stories of how defeat by disease was turned into victory or to detail some of the tragedies of the final conquest over brave spirits by the inevitable. In the thirteen years of its existence over two hundred and fifty men and women have lived on this farm for varying periods of time. The best occupational results have been accomplished in the poultry yard where four to six patients are employed all of the time. The present manager, a former bookkeeper, has been in charge over four years and is an expert on poultry having studied the theoretical as well as the practical side. Several of his graduates are engaged in poultry raising on other farms and one has started a plant for himself. From 1910 to 1921 the poultry plant produced an average of 5281 dozens of eggs a year and the number is increasing steadily. Carefully kept books show an annual profit in this department.
In Eudowood Sanatorium with its three separate departments; the sanatorium for early cases, the hospital for advanced cases and its large farm on which is located the farm colony department for convalescents, with a capacity throughout of 100 patients there are on an average fifty-five employees including the medical and nursing staff and the farmers. Of this number 46 are former patients. Very likely the proportion of employees to patients could be considerably decreased but we prefer to employ a patient wherever possible though it may take more of them to do the work.

Our plan of reconstruction therapy and patient employment was badly upset by the exigencies of war and for the past few years we have not had so many engaged in practical exercise and training but have maintained the average number on the pay roll.

For the past eleven years the average number of patient employees has been 46. They have worked an average of 2000 days each and have earned 57 cents a day and their board.

For the successful operation of an occupational therapeutic scheme of this sort a tradition must be established among the patients that when their strength and health permits they will be given something to do and this something is calculated to help them overcome the disease. The disease must first be rendered quiescent by forced rest, etc., which will be indicated by the disappearance of constitutional symptoms and the decrease or complete disappearance of local symptoms and signs and then graduated doses of exercise can be prescribed. After strength and working are restored by occupational therapy, then vocational training can be introduced. The doctors, nurses and employees, consisting of non-patients and ex-patients alike, must be in sympathy with the scheme and must be intensely interested in the ultimate object sought. They must believe in it and must show enthusiasm and interest that will make the patients feel that it is for their good and not merely a scheme to exact labor of them. When they are convinced of this they will place the beckoning goal of restored health before them and follow implicitly the lead and advice of their medical advisors.