WORK FOR THE TUBERCULOUS DURING AND AFTER THE CURE*1

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In the following paper an attempt will be made to set forth the experience of tuberculosis workers in the United States of America in dealing with this subject; to record some of the conclusions made and the principles which have already been evolved; and to outline a program for future development.

Although the subject divides itself naturally into two broad divisions; namely, work during the cure, and work after the cure, they are inter-related and, indeed, mutually dependent in a large degree. Further, while the object of the treatment of a tuberculous person is his restoration to efficiency and usefulness in the world, it is at the same time a part of the larger scheme, which has for its aim the eradication of tuberculosis; or, at least, its reduction to a minimum as a cause of morbidity and mortality. Therefore, in all phases of work against tuberculosis, the essential "one-ness" of the campaign must be borne in mind, and it is in that spirit that the observations herein set forth will be made.

Under the first division of the subject, the paper will discuss:
  a. General considerations.
  b. Work as a "diversion."
  c. Work providing graduated exercise (ad hoc).
  d. Prescriptions and control.
  e. Arts and crafts work.
  f. Self improvement studies and pre-vocational training.

Under the second division, there will be discussed:
  a. Deleterious occupations.
  b. Sickness records in industry.
  c. Outdoor and indoor employment.

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d. Follow-up service.
e. Occupational health standards.
f. Surveys. The patient: the industry.
g. Employment agencies.
h. Opportunities for employment.
1. In or about the tuberculosis sanatorium.
2. In the normal channels of commerce and industry.
3. In productive workshops specially organized for tuberculous persons.
4. In agricultural and industrial settlements also specially organized for the purpose.
i. Vocational advisers for the tuberculous.
j. Surveying an industry.

WORK DURING THE CURE

General considerations

For many years, tuberculosis sanatorium authorities in the United States have recognized the value, from a therapeutic standpoint, of properly regulated exercises and work during the period of a patient's treatment. Probably the first inspiration towards the employment of exercise came from the experiments of Walter of Nordrach, but an early and notable experiment was made in the United States at the White Haven Sanatorium, Pennsylvania. In 1902 a system was established whereby every patient "on exercise" should perform some of the necessary duties in and about the institution; the duration and type of work being prescribed by the attending physician. This was probably the first instance in the United States of the application of graduated exercise in a systematic way as a part of the daily regimen of a tuberculosis sanatorium.

Later, the theories and practice of Paterson of Frimley also influenced many American physicians engaged in caring for the tuberculous; although there were probably a far greater number who maintained an attitude of conservation towards his theories. But of the physicians in America who were influenced by Paterson's experiments, few followed his methods in their entirety; the attitude of the great majority, both of be-
believers and doubters, being probably represented by that of one of the foremost tuberculosis specialists in America, who has said, "Exercise is as important as rest in the treatment of tuberculosis, but vastly more dangerous" (1).

The experience of workers in the field of nervous maladies became a further source of inspiration and influence.

Years ago, practitioners attempting to give the Weir Mitchell rest cure for nervous invalids met with poor success. Later it came out that while the patient was placed at rest physically, his mind, and especially his attention, was not permitted to be idle. He was diverted by being read to, massaged, bathed, fed and talked to, until the depressing or fatiguing thoughts which characterized his illness were forgotten. When carried out with proper attention to the morale or mental attitude of the patient, the rest cure was successful (2).

**Diversional occupation**

There seems to be little doubt that many of the earlier sporadic attempts to provide occupation for the tuberculous were made chiefly to prevent that almost intolerable ennui which in nearly all cases results from a period of prolonged idleness, such as the cure demands. For, more than in any other chronic disease, apparently, there appears to be a tendency on the part of the tuberculous patient towards morbid introspection, with consequent unrest of mind and worry over the future; causing a general mental unrest, which, unless relieved, often goes far to counteract the benefit to be obtained from the physical rest which has been prescribed.

**Graduated exercises**

In the early experiments in the United States, the idea of graduated exercise and work as therapeutic measures in tuberculosis found expression in various ways. Reference was made earlier to the work done at White Haven, Pennsylvania. Because it is typical of similar work undertaken by patients in many other institutions, the following will be of interest:

The kind of work which is done by the patients at White Haven is, for women: waiting on the table, cleaning silver and kitchen ware,
preparing vegetables, ironing, mopping the floors of the cottages, cleaning the cellars of the cottages, making beds, sewing and cleaning house. The kind of work done by the men is: serving and carrying the meals, cleaning, washing dishes, moving bedding, making sputum boxes, collecting waste paper, delivering ice, cutting firewood, helping in the greenhouse, helping on the poultry farm, helping in the stable and helping in forestry and garden work (3).

In many sanatoria, however, the exercise was limited to walking. In point of fact, even today in many sanatoria for the tuberculous, walking forms almost the only physical exercise until a patient is discharged from the institution.

But here and there, as the years went by, physicians in increasing numbers were found who believed that, “Mental content is as necessary in successful treatment as pure air and good food” (4). As another physician put the matter, “The patient who is bored has neither a good appetite, nor a good digestion” (5).

Valuable as were the graduated exercises in the form of institutional duties, there were many patients to whom such work did not appeal and for whom it provided but little in the way of mental content. Therefore, as will later be shown, many occupations unrelated in themselves to the work of the institution have been introduced for their therapeutic effect.

If it be granted that tranquillity of mind is indispensable in a patient who is taking the cure, and that it can be induced and developed by occupation, there arises the question of what occupations to provide. The answer to this question is an individual one, for it depends in every case on the nature and temperament of the patient himself. Primarily, of course, his physical condition must be considered; next, his capabilities—mental, or manual, or both—and, lastly, his tastes or interests.

*Prescriptions and control*

Obviously, the proper person to decide on the suitability, or otherwise, of any work or occupation to be used as a therapeutic measure, is the physician himself. From its very name, it should seem evident that occupational *therapy* must be under the control of the physician who is responsible for the case;
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whether the case be orthopoedic, mental, cardiac, tuberculous, or suffering from any other disease.

Because, moreover, of the fact that exercise in tuberculosis may be "vastly more dangerous," (Brown), it is especially necessary that it be under the control of the physician, for there is often hazard in overdoing. For example, many a patient has undertaken, at the inspiration of an instructor with the true arts and crafts spirit, some piece of work which, as it grew under his hand, has so carried him away with the creative spirit as to cause him to work harder and longer than was proper in the light of his physical condition. (On the other hand, patients are sometimes found who have learned all too well from the precepts and admonitions of the physicians while in the acute stage of illness the value and necessity of rest, and have become so mentally lethargic that they are averse to "taking hold" once more; although their physical condition justifies it and would benefit from it.)

The proper method, of course, is for the physician to prescribe occupations, just as any other form of therapy is ordered by him. It should be a cardinal principle, and an invariable rule of practice, that no exercise or occupation should ever be engaged in by a tuberculous patient unless it has been prescribed by the physician in charge of the case.

The giving of such a prescription is a postulation that the means for filling it are available, and that the proper person will see that it is applied. But there is also involved on the part of the physician the observation of the effect of the prescription; therefore, from first to last, it is a medical responsibility. Further, the giving of a prescription for some therapeutic occupation involves on the physician's part a knowledge of the nature of the several occupations available; just as the prescription of drugs involves a knowledge of the nature and action of materia medica.

A work prescription for a tuberculous patient should specify, first, the period of exercise or work. Of equal importance is the type of work; as light, medium or heavy. It is also of value if the physician can include in this prescription some suggestions
as to the type of work indicated by the patient's temperament; as, diversional, mental, artistic, or manual, or a combination. In this connection, it should be pointed out that, for cases with a poor prognosis, it is often possible to provide work of a diversional character which will tend to alleviate a patient's condition; even though the ultimate therapeutic value is not a consideration in the case.

In addition to his written prescription for exercise or occupation for a tuberculous patient, the physician can assist greatly by verbal hortation of the patient. In point of fact, a continuous interest on the part of the physician is necessary. "I think," said the Medical Superintendent of one of the best known tuberculosis sanatoria in the United States, "I spend more time in the occupational therapy department than anywhere else." It is, perhaps, unnecessary to add that the work in his institution is filling a real place in the scheme of treatment.

Arts and crafts work

Various attempts have been made to give a list of occupations suitable for use as therapeutic measures in tuberculosis. In general, it may be stated that, of the occupations which it is feasible to provide in a sanatorium, including hospital duties, very few are inhibited by the nature of the operations involved, or of the materials employed. Broadly speaking, any occupations which involve violent, prolonged use of the pectoral muscles should not be engaged in by tuberculous persons. For example, wood-working has been found to be very feasible and useful in occupational therapy for the tuberculous, but certain operations usually performed by hand by persons in good health, such as the sawing of thick material, and heavy planing and boring, are not permissible. The sanatorium wood-working shop should, therefore, always be equipped with machinery to perform these operations.

Any consideration as to the suitability, or otherwise, of occupations for persons taking the cure involves a consideration of the classifications of sanatorium patients. Under the classification of patients generally adopted in sanatoria in the United
States into (a) bed or "infirmary" cases; (b) semi-ambulant cases; and (c) ambulant cases, it has been found possible to provide work for patients in each category. Obviously, however, the work provided for bed patients differs greatly from and must be simpler and less in quantity than that provided for ambulant patients nearing the period of discharge.

The following is a list of the occupations (in addition to light hospital duties) reported as being provided in a typical American hospital for the tuberculous:

*Shop work for all patients able to come to the shop.*

1. Basketry  
2. Wood-work  
3. Painting, staining, and decorating  
4. Rug-making  
5. Weaving  
6. Tin-work, toys, etc.  
7. Netting  
8. Chair-seating  
10. Dress and household embroidery  
11. Lampshade making  
12. Artificial flowers and millinery ornaments  
13. Bead-work-bags, dress ornaments, etc.  
14. Mechanical drawing, design, lettering, and sign and show card writing  
15. Pamphlet binding  
16. Printing  
17. Jewelry

For patients unable to come to the shop, the hospital provides "short, simple and light projects, selected from any of the occupations listed for the shop."

The differentiation between patients able to go to the shop and those who are unable to do so, as connoted in the foregoing statement, is of interest; particularly as it forms a basis for the organization, equipment and personnel of a system of occupational therapy in a hospital or sanatorium.

The term formerly used to denote the work provided for those patients unable to go to the hospital "curative workshop" was "bedside work." Having in view the fact that many patients, especially in a tuberculosis sanatorium, while not strong enough to undertake shop work, are able to dress and sit or recline in a chair on a cure porch, or in a sun room, the term "ward occu-
pations” seems much more suitable than “bedside work” for any occupational therapy provided for such patients. The term “ward occupations” was, it is believed, first used by the Military Hospitals Commission of Canada and was later adopted by the United States Government which issued a bulletin on the subject (1), for use in the hospitals devoted to the reconstruction of soldiers and sailors disabled in the World War.

It will be noted that all of the occupations listed above are indoor occupations, no outdoor occupations being provided. The occupations named are typical of those provided in tuberculosis sanatoria today in the United States, and the omission of outdoor occupations is also general. Many attempts to provide outdoor work for therapeutic purposes have been made, but there are hardly any examples of success in this direction.

It is also worthy of mention that while “graduated exercise,” in the form of domestic work in and about the buildings, has been applied in many sanatoria, it is gradually being supplemented by more interesting work of the kind referred to in the list given above. It is probably true, though, that for patients in institutions devoted to the care and treatment of indigent persons, domestic services will continue to be employed as the chief means of exercise. The great objection to such work is that it may become a dull, mechanical routine; lacking the interest and inspiration which comes from creative work of the arts and crafts type.

Reference to the use of occupational therapy in the war hospitals of the United States is of great importance in any review of work for the tuberculous during the cure, because of the enormous impetus given to this form of treatment, in all army tuberculosis sanatoria. For while, as indicated earlier in this paper, there were, for many years prior to the World War, numerous tuberculosis physicians in the United States who believed in and used occupational therapy, it is fair to state that the present widespread interest in it and its adoption in civilian institutions—now becoming general all over the country—is largely due to the example and experience of the army hospitals.
But the example of the army hospitals stimulated more than a quantitative increase; for it helped to change and broaden the general conception of the function of occupational therapy to a marked degree. It has been well said that the world war was notable in that, for the first time in history, the leading nations engaged in it realized that pensions and medals were not in themselves sufficient for men disabled in the service of their country. In most of the warring countries, systems of vocational re-education were established to enable disabled soldiers and sailors to overcome the handicap of their disability and once more to take their places as useful citizens.

Self-improvement studies and pre-vocational training

The establishment of a scheme for the vocational rehabilitation of men disabled in the war had a very direct effect on the provision of occupations as a therapeutic measure in the hospitals devoted to their care. It is true that, from the earliest beginnings, occupational therapy workers have kept in mind, for certain cases, not only the immediate therapeutic value of the work in restoring impaired functions of the body or the mind, but also its possible value, from a vocational point of view, after the patient leaves the hospital. But the idea of helping a disabled soldier to learn some gainful occupation suited to his handicapped condition appealed to many physicians and others to whom the idea of occupational therapy had hitherto presented little attraction. Interest having thus been aroused, it was a comparatively simple matter to show, especially from the experience of European and Canadian rehabilitation work that the sooner after a man's disablement his vocational re-education was begun the more successful was it likely to be.

The effect of this on the content of the occupational therapy work in the hospitals and sanatoria was to emphasize the value of many subjects of which practically no use had hitherto been made in this connection. Occupations were also introduced that, usually because of limitations of expense in the ordinary hospital, it had seldom before been possible to provide. Academic subjects were widely introduced and "self-improvement
classes" in general education became a feature of the work. Commenting on this, the Government Bulletin on Ward Occupations to which reference has already been made, said:

The self-improvement classes . . . . are the solution for a large number of patients. Whether the patient be illiterate and so needs to learn to read or write or has gone through the whole or only a part of grammar school, the period of ward occupations will alike furnish a time for improving educational equipment. It will be a time which the professional man or student may cherish to continue studies or develop neglected lines. Because a man needs no training to continue his former occupation, it does not follow that he cannot improve his proficiency in that line. Such helpful subjects as a theoretical knowledge of the practical work he knows—English, mathematics, and commercial geography—will add to his industrial efficiency. The value of education, "the workingman's capital," cannot be too strongly urged, and a liberal education is an asset in vocational equipment. The field, however, is wider than academic subjects. A knowledge of bookkeeping, salesmanship, farm or shop economics, and theory of buying and selling, although the training is not pursued for vocational ends, may have an indirect vocational value.

The patients who cannot be reached through their minds, but who can use their hands, have a wide variety of occupations among which are typewriting, free-hand lettering, designing, mechanical drawing, and blue-print reading.

Subjects which are less closely related to wage-earning occupations are worth while, as they increase social interests, as well as therapeutic possibilities; especially the more useful ones, such as metal and woodworking, textile weaving, and book-binding.

Ward occupations should have pre-vocational value, whenever possible, for that 20 per cent of the patients who will need partial or complete re-education. Crafts are less desirable for these patients, as they do not need resources so much as new channels of economic activity. Educational improvement and such elementary processes of the new vocation as it is possible to perform in the ward should be selected for this group of patients. The nature of the patients' disabilities and the equipment limitations of the ward will preclude many desirable processes, but training of a sound character may nevertheless be begun.
It is worthy of record that one of the most valuable subjects of instruction in the occupational therapy classes in the army hospitals and sanatoria was that of English for the foreign born, of whom there were large numbers in the American Expeditionary Force. The same is true of some of the large civilian sanatoria of the country; as witness the following statement from the Municipal tuberculosis sanatorium of a large American city (7):

One of the most useful courses given is that in English. The patients at the sanatorium are largely foreign. Many of them do not speak enough English to enable them to enter the regular vocational courses.

At present the greatest problem confronting America is the assimilation of the foreign-born portion of the population. This problem would be greatly simplified if all of these people could speak and could understand English. It really seems a waste of opportunity to allow any of these people to be present in any institution belonging to the city or to the government without teaching them something of the English language. Tuberculosis would be far from a calamity for many of our patients if they learned the language of their adopted country while being treated for the disease. It really seems as if it would be desirable to require every patient that has passed the febrile stage of the disease to spend at least an hour daily in the study of the English language, or in the study of civics.

Perhaps, however, the most important factor in broadening the conception and aiding in the application of occupational therapy in the army hospitals was that there was adopted the plan of making a survey by a vocational adviser, and a physician acquainted with industries of every disabled man who might possibly later on need re-education for some new occupation because of his war disablement. This survey gave the physician in charge a basis for a prescription of the type of occupational therapy best suited to the man’s needs as a restorative measure, and at the same time provided the officer in charge of the curative work with an opportunity of relating it to the vocational re-education towards which the disabled man was to be directed on his discharge from the hospital. In other words, if several varieties of occupation, available in the hospital shops or classes, would
have equal value for therapeutic purposes, but one was more valuable than the others from the point of view of the man’s subsequent training for a definite occupation, that one would be prescribed.

The net result today is that in the United States work for the tuberculous during the cure has benefitted largely from the experiences in the past in civilian hospitals and the more recent experience with tuberculous soldiers; and its value as a therapeutic measure is now generally recognized as being fourfold: (a) The morale and discipline is improved, and contentment afforded the patient; (b) Mental activities are re-established, maintained and enhanced; (c) Muscular tone is restored; (d) Training towards economic re-establishment is provided.

The Government scheme for the vocational rehabilitation of men disabled in the war has, however, had an even wider effect. Based on the recognition of the possibilities of reclaiming men disabled by wounds or illness in the war, the Congress of the United States, in June, 1920, passed an act known as the “Industrial Rehabilitation Act;” the object of which is “the promotion of vocational rehabilitation for persons disabled in industry, or otherwise, and their return to civil employment.”

The importance of this measure may be appreciated when it is realized that it has been estimated that the number of persons disabled annually in the United States by industrial and other accidents is equal to the number of those who would be disabled from an army of 1,500,000 men in active service in the field. If to that number be added the number of those disabled by industrial illness, it is said that the total would be equal to the number of disabled from an army of 2,000,000 men in active service.

The scope of the Industrial Rehabilitation Act can best be described by the following quotation from a bulletin issued by the Federal Board for Vocational Education (8):

Under this act the Federal Government does not propose to undertake the organization and immediate direction of vocational rehabilitation in the states, but does agree to make substantial financial contributions to its support. It undertakes to pay over to the states annually
certain sums of money, and to cooperate in fostering vocational rehabilitation. The grants of federal moneys are conditional and the acceptance of these grants imposes upon the states specific obligations to expend the money paid over to them in accordance with the provisions of the act.

This cooperation of the states with the federal government is based upon four fundamental ideas: First, that vocational rehabilitation for persons disabled in industry, or otherwise, being essential to the national welfare, it is a function of the national government to encourage the states to undertake this new and needed form of service; second, that federal funds are necessary in order to equalize the burden of carrying on the work among the states; third, that since the federal government is vitally interested in the success of industrial rehabilitation, it should participate in this work; and fourth, that by creating such a relationship between the national and state governments proper standards of efficiency in vocational rehabilitation can best be set up.

This offer of cooperation and assistance brought an immediate response from some states which had already realized the need for some scheme of rehabilitating the victims of accidents and disease in industry. Other states followed, and in all, some thirty-three states to date have joined with the federal government in this important scheme, and are already at work.

There was some doubt at first as to whether or not tuberculosis was to be included in the scope of the act, but it has been decided that under the broad definition of the act itself, persons disabled from the disease are eligible under the following section:

SEC. 2. That for the purpose of this act the term "persons disabled" shall be construed to mean any person who, by reason of a physical defect or infirmity, whether congenital or acquired by accident, injury or disease, is, or may be expected to be totally or partially incapacitated for remunerative occupation; the term "rehabilitation" shall be construed to mean the rendering of a person disabled fit to engage in remunerative occupation.

While it seems probable that, for a time at least, efforts under this act will largely be concentrated on persons having visible disabilities (amputations, etc.), there can be little doubt that eventually a large measure of attention will be given to persons
disabled by tuberculosis. Inasmuch as the long period of treatment necessary for the arrest of the disease will offer excellent opportunities for pre-vocational training and for actual vocational training in such occupations as bookkeeping, stenography, drafting and other commercial and artistic pursuits, it seems probable that work for the tuberculous during the cure will continue to develop and become of increasing importance in this country.

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