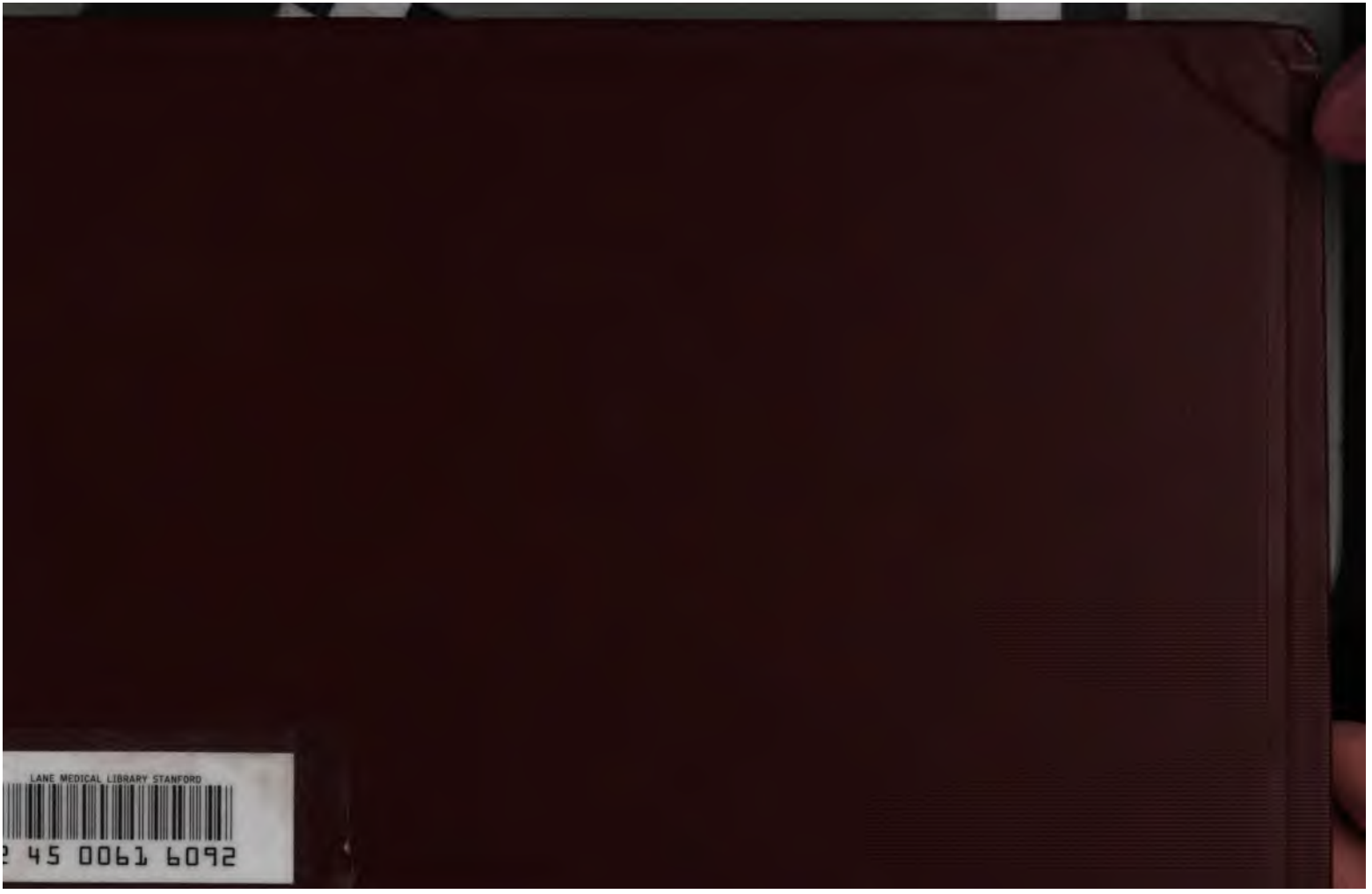

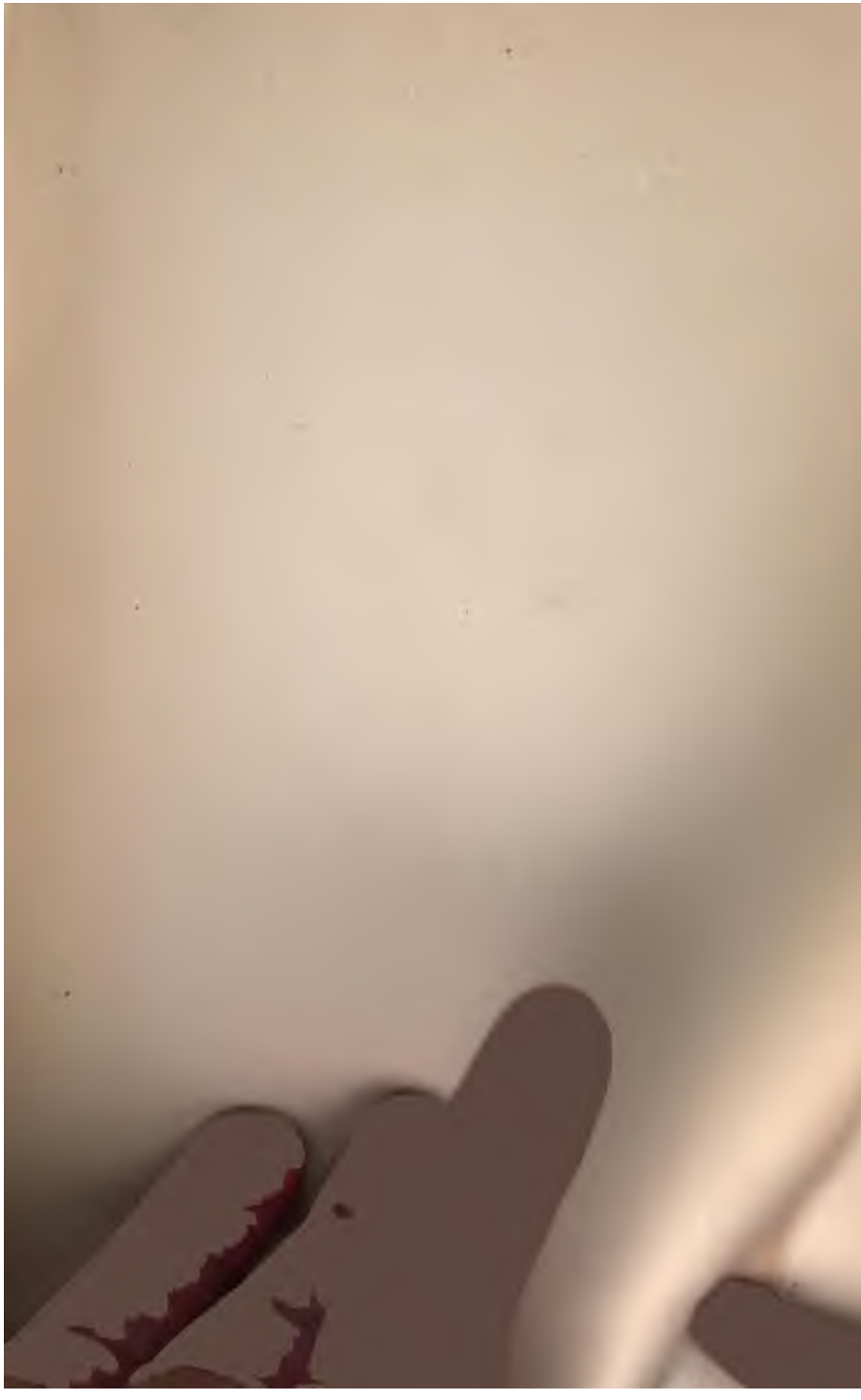

RECONSTRUCTION THERAPY

BY

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MEAE CONJUGI

CREDO

That occupation is as necessary to life as food and drink.

That every human being should have both physical and mental occupation.

That all should have occupations which they enjoy, or hobbies. These are the more necessary when the vocation is dull or distasteful. Every individual should have at least two hobbies, one outdoor and one indoor. A greater number will create wider interests, a broader intelligence.

That sick minds, sick bodies, sick souls, may be healed thru occupation.

PREFACE

In an endeavor to sum up the results of a number of years experience and study of a subject which is in process of growth, there is great danger that what one says may become out of date. It is only since the Great War that Reconstruction Therapy has attracted the general attention and interest that I believe it deserves. With this sudden interest it seems to me that there is a danger lest the well-meant enthusiasm of poorly informed disciples may do harm. While this book was planned and partly written before 1915 it has been necessary to broaden its scope to include certain aspects of the subject which have become more prominent since that period. The present time is one of great and sudden changes which require rapid physical and mental adjustments of the individual. As a consequence many are unable to keep their normal poise and suffer mental breakdowns. Others by a physical disability and a fear of inability to adjust themselves to living conditions may suffer with a disabling inhibition of their mental powers. It has been proved that reconstruction therapy can be used to restore both the physically and mentally sick to their normal or perhaps above it, and make them once more useful units in a community. If, therefore, I have added anything which will be helpful to those who are helping others I shall feel that I have not labored in vain.

It is extremely difficult when one has received knowledge or stimulus from so many sources, so many friends, to give proper credit. I have tried to indicate in every case where a published statement has been of assistance.

This has been impossible for the many thoughts which have followed talks with others, or a sight of some object. I must therefore run the risk of appearing ungrateful.

Ackowledgment should be made, however, to Miss Ada M. Carr, Miss Mary A. Tucker and Miss Florence E. Green for much assistance in the preparation of the manuscript.

To Dr. W. L. Russell and the Bruce Publishing Company, Judge Quentin D. Corley and the Johnston Printing and Publishing Company, Mr. Douglas C. McMurtrie and the Red Cross Institute for Crippled and Disabled Men, and Dr. Britton D. Evans I am indebted for the use of a number of blocks used for the illustrations.

My thanks are also due the publishers for their cooperative spirit.

WILLIAM RUSH DUNTON, JR.

TOWSON, MD.,
March, 1919.

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RECONSTRUCTION THERAPY

CHAPTER I

INTRODUCTION

It is a strange thing that the physician is so often willing, even anxious, to discard remedies which have proved efficacious in his practice and in that of others, for something new to him and perhaps hitherto untried, so that we have fashions in therapeutics, some of which seem quite as bizarre to us in after years as do those of costume. The reason for changes in therapeutic fashions is not due, however, simply to a desire for a change, but grows out of the physician's wish to do something more for his patient than he is already doing, so that recovery may be accelerated. It is undoubtedly true that exploiters of new remedies take advantage of this. With the rapid changing of therapeutic fashions it is not strange that at times we temporarily lose sight of some of our best remedial measures. On the other hand, perhaps these measures suffer occasionally from too great enthusiasm on the part of their advocates. The fact that, in going over the files of medical journals, we find certain drugs, operations, or other forms of treatment being advocated at varying intervals is probably an endorsement of their efficacy. Were they valueless no one would take the trouble to bring them again to our knowledge.

Two therapeutic measures which have been used for many years in caring for the insane are water and work, and both of these have had periods when they have been warmly advocated and again when they have been barely

mentioned in medical journals. These remedies, it seems, must have been used even before recorded history and we know that Hippocrates wrote upon Airs, Waters, and Places, that in the latter part of the 18th century hydropathy was fashionable, and that ten or fifteen years ago the use of prolonged baths and other forms of hydrotherapy were warmly advocated for mental disorders.

The records of work therapy are not so good, but it is easily conceivable that for ages past mental cases were permitted to occupy themselves in certain ways, just as almshouse cases are permitted to "putter" around and do rather aimless work at the present time. No authentic records, however, of such exist, although Dr. Eva Charlotte Reid states[1] that Galen says: "Employment is Nature's physician." I have been unable to verify this quotation and the earliest record I have been able to find where work or occupation has been advocated as a remedial measure is in Pinel's writings (1791).

In a translation of Pinel,[2] under the section entitled The Moral Treatment of Insanity, may be found several references to occupation, as follows:

"We are informed by Dr. Gregory, that a farmer, in the North of Scotland, a man of Herculean stature, acquired great fame in that district of the British empire, by his success in the cure of insanity. The great secret of his practice consisted in giving full employment

[1] Ergotherapy in the treatment of mental disorders. *Boston Medical and Surgical Journal*, clxxi, 300, August 20, 1914.

[2] A Treatise on Insanity, in which are contained the principles of a new and more practical nosology of maniacal disorders than has yet been offered to the public, exemplified by numerous and accurate historical relations of cases from the author's public and private practice; with plates illustrative of the craniology of maniacs and ideots By Ph. Pinel, Professor of the School of Medicine at Paris, Senior Physician of the Female National Asylum la Salpetriere, late Physician in the Asylum of Becetre, and member of many learned societies. Translated from the French, by D. D. Davis, M. D., Physician to the Sheffield General Infirmary, Sheffield. Printed by W. Todd, for Messrs. Cadell and Davies, Strand, London, 1806.

to the remaining faculties of the lunatic. With that view, he compelled all his patients to work on his farm. He varied their occupations, divided their labor, and assigned to each, the post which he was best qualified to fill. Some were employed as beasts of draught or burden, and others as servants of various orders and provinces. Fear was the operative principle that gave motion and harmony to this rude system. Disobedience and revolt, whenever they appeared in any of its operations were instantly and severely punished."

The same instance is referred to by Falret who, makes more emphatic condemnation: "The conduct of a Scotch farmer, mentioned by Gregory[1] cannot be too strongly reprehended, who worked the insane for the culture of his grounds, and who worked them like beasts of burden." Needless to say such measures can hardly be classed as occupational therapy. Again (p. 72), after describing a case Pinel says: "Close attention to his trade for some months, completed the restoration of his intellect." Again (p. 87), "The utmost vigilance of the domestic police will be necessary to engage the exertions of every maniac, especially during his lucid intervals, in some employment, laborious or otherwise, calculated to employ his thoughts and attention." Again (p. 89), "Moderate employment and regular exercise, co-operating with the energies of nature herself, restored him, in a short time, to the full enjoyment of his intellectual faculties." Finally (p. 91), "What I had done at Bicetre, comprehended but a small part of my plan toward extending its liberties and multiplying its conveniences for laborious and other exercises."

The above translation is probably that of Pinel's Traité which was published in 1791, making Pinel one of the earliest advocates of occupation as a means of treatment of the mentally sick.

The translator, Dr. Davis, in an introduction to the above work, makes reference to much earlier therapeutic

[1] Pinel, Traité, etc., p. 312.

uses of occupation and diversion as follows (p. xxii): "At both extremities of ancient Egypt, a country that was at that time exceedingly populous and flourishing, were temples dedicated to Saturn, whither melancholics resorted in great numbers in quest of relief. Whatever gifts of nature or productions of art were calculated to impress the imagination, were there united to the solemnities of a splendid and imposing superstition. The most voluptuous productions of the painter and the statuary were exposed to public view. Groves and gardens surrounded those holy retreats, and invited the distracted devotee to refreshing and salubrious exercise. Gaily decorated boats sometimes transported him to breathe amidst rural concerts the purer breezes of the Nile. In short, all his time was taken up by some pleasurable occupation, or rather by a system of diversified amusements, enhanced and sanctioned by superstition."[1]

Work was advocated as a remedial measure in a letter written in 1798 by Dr. Benjamin Rush to the Managers of the Pennsylvania Hospital. This was followed by other recommendations that facilities be given for occupation, one of which is somewhat pathetic in that reference is made to the illness of a relative then under care in the hospital.

In 1803 that remarkable man, Johann Friederich Reil, published his Rhapsodieen ueber die Anwendung der psychischen Curmethode auf Geisteszeruttungen, in which he devotes eight pages to treatment by work, saying (p. 240): "Work, moreover, is an excellent means besides to cure insanity itself. It must be wholesome; and whenever possible, be done in the open air and combined with exercise and change." It is not possible here to quote these pages in entirety but they are of extreme interest. Reil was apparently in advance of his time in this and in other subjects.

It is of interest to note that in a decade, in three coun-

[1] Nosographie Philosophique par Monsieur le Docteur Pinel, Tome, ii, p. 28.

tries, France, America, and Germany, strong recommendations of the value of work as a remedial measure in mental diseases were written.

In 1813 Sir James Connolly, speaking of the York Retreat, said "The substitution of sympathy for gross unkindness, severity, and stripes; the diversion of the mind from its excitements and griefs by various occupations, and a wise confidence in the patients when they promised to control themselves led to the prevalence of order and neatness, and nearly banished furious mania from this wisely devised place of recovery."

A few years later (1815) in a very interesting communication to the Board of Governors of the New York Hospital, Mr. Thomas Eddy, making recommendations for the improvement of the care of the insane says:

"8th. Such of the patients as may be selected by the physician, or the Committee of the Asylum, shall be occasionally taken out to walk or ride under the care of the deputy-keeper; and it shall be also his duty to employ the patients in such manner, and to provide them with such kinds of amusements and books as may be approved and directed by the Committee.

"9th. The female keeper shall endeavor to have the female patients constantly employed at suitable work; to provide proper amusements, books, etc., to take them out to walk as may be directed by the Committee."

In 1822 Dr. Wyman, then Superintendent of McLean Hospital, in his annual report says that "the amusements provided in the establishment for lunatics, as draughts, chess, backgammon, nine-pins, swinging, sawing wood, gardening, reading, writing, music, etc., divert the attention from unpleasant subjects of thought and afford exercise both of body and mind (and) have a powerful effect in tranquilizing the mind, breaking up wrong associations of ideas and inducing correct habits of thinking as well as acting."

Dr. Bell, who was later superintendent of the same hos-

pital, in his report for 1839 speaks of occupation as a means of cure.

Esquirol[1] praises the value of physical exercises and occupations, and quaintly says (Vol. i, p. 142): "This valuable resource of work is missed in the treatment of the wealthier class of men and women. Its place is not entirely filled by supplying walks, music, lectures and social events. The habit of idleness in the homes of the well-to-do counterbalances other advantages which this class possess for recovery." And again (Vol. ii, p. 523) after speaking of workshops he says: "If these occupations are not possible for the wealthier classes, we must provide them with employment fitted to their education, giving them gymnastics and games which exercise their muscles." He speaks (ibid.) more directly when he says that work "is a stimulant to all," and that by it "we distract attention from their illness; we fix their attention on reasonable things; we bring back to them some of the practices of order; we quicken their intelligence; and in this way we improve the lot of the most unfortunate."

In 1846 Dr. Isaac Ray, the Superintendent of Butler Hospital, wrote a paper on Labor in Principal Hospitals for Insane in Great Britain, France and Germany. That same year Dr. John M. Galt, Superintendent of Eastern Lunatic Asylum of Virginia at Williamsburg, published a book entitled "The Treatment of Insanity" in which he advises giving patients employment (p. 509). And again (p. 511) he amplifies on the subject as follows: "No class of patients is so happy as the laborers; no other convalescents recover so rapidly and favorably; many of these would be completely miserable without labor and their recovery retarded. The patient enters by it into accustomed channels of thought and action, and the mind performs rationally at labor, if insane everywhere else. . . . We think highly of employment to procure rest, give strength, promote appetite, and

[1] Des maladies mentales. Paris, 1836.

facilitate recovery. When our patients begin to mend they desire employment. Common amusements of hospitals are useful, and far better than nothing; but will not compare with labor as a means of restoration. It is true that "all work and no play makes Jack a dull boy." It is no less true, that all play and no work becomes insipid after a while, and does not give that healthy impulse to the mind which the idea of utility in labor is sure to impart."

In 1846 Dr. John Evans, of Illinois, in an article on the treatment of insanity[1] recommended the employment of patients.

In 1852 there was published[2] an extract from a letter written by a "manager" stating: "By all pleasant and winsome sights and sounds, by cheerful occupation, by outdoor labor and indoor sports or mechanical pastimes, ought "minds diseased" be won from their gyrations—their never-ending rotation upon the point of fallacy."

In 1854 the famous Dr. Kirkbride in an article treating of the construction, organization and management of hospitals for the insane[3] says: "Labor then is one of our best remedies; it is as useful in improving the health of the insane, as in maintaining that of the sane. It is one of the best anodynes for the nervous, it composes the restless and excited, promotes a good appetite and a comfortable digestion, and gives sound and refreshing sleep to many who would without it pass wakeful nights."

Henri Falret[4] in an extremely interesting article on the Construction and Organization of Establishments for the Insane, makes a number of references to early writers on the subject.

Falret himself says in speaking of Occupations and Amusements for the Insane, "Since Pinel[5] has demon-

[1] *American Journal of Insanity*, Vol. iii, p. 259.
[2] *American Journal of Insanity*, Vol. viii, p. 292, January, 1852.
[3] *American Journal of Insanity*, Vol. xi, p. 147, October, 1854.
[4] *American Journal of Insanity*, Vol. x, p. 218, April, 1854.
[5] Traité medico-philosophique sur l'alienation mentale, p. 237.

strated the happy effects of occupation in asylums, all physicians concur in the opinion that it is one of the most important principles in the treatment of the insane, and in the organization of the establishments destined for their reception. Is it not the best and most effectual way of regulating their life, of fixing their attention, of diverting them, of giving their faculties a positive and well-determined direction, in one word, of regulating their physical and moral actions?"

Surely these are wise words and those which follow are also of value. He alludes to the Salpetriere as "one of the first French asylums where work has been considered honorable." He also discusses Occupation for Women, Theatricals, Schools and Reunions. The following quotation from theatricals is of interest: "In the establishments of Charenton, Aversa and Sonnenstein, they have heretofore—and it is a singular idea—had theatrical plays by the insane, and according to Reil[1] and to Schwzeigger,[2] nothing better attracts the attention of the patients or produces a happier impression, especially if the pieces are composed so as to throw ridicule upon their delirious ideas. We think with Esquirol,[3] Nostiz,[4] Frank,[5] Roller,[6] and Guislain,[7] that these plays result in evil rather than good, and it is better to renounce them entirely."

Dr. W. Lauder Lindsay, Superintendent of James Murray's Royal Asylum at Perth, Scotland, in his report for 1860–61, gives a very admirable exposition of the value of occupation.[8]

[1] Rhapsodien, p. 246.
[2] Ueber Kranken und armen Anstalten zu Paris, etc., p. 11 a 15 et 19 a 27.
[3] Art. Folie, p. 228.
[4] Beschreibung, etc., pp. 340, 342.
[5] Praecepta, p. 694.
[6] Die Irrenanstalt, p. 206.
[7] Traité sur l'alienation mentale et les hospices d'alienes, p. 277.
[8] Reprinted in *Maryland Psychiatric Quarterly*, Vol. iii, p. 10, July, 1913.

From the published records of the Pennsylvania Hospital, the Friends' Asylum, and McLean Asylum (the last two are now called hospitals) we know that these institutions have for the greater part of their existence been active in providing various forms of occupation for the patients.

The first number of the American Journal of Insanity was published in July, 1844, and from the first volume has contained reports of the proceedings of the Association of Medical Superintendents of American Institutions of the Insane, since 1893 the American Medico-Psychological Association, so that its pages give us a representative view of the opinions of those in charge of the mentally sick. In going over the files of this journal we find many references to occupation and many strong endorsements of its value as a therapeutic measure. Very many of these opinions have been expressed in the reports of various institutions and are quoted in summaries, etc. It would appear, however, that during the latter part of the last century the majority of hospital superintendents lost sight of the therapeutic value of occupation and were too prone to regard only its economic aspect. This opinion is confirmed by Dr. Frank Crampton Hoyt, Superintendent of Iowa State Hospital at Clarinda, who in a paper read before the association in 1898 says:

"Notwithstanding that for half a century the superintendents of our American hospitals for the insane have had their attention called repeatedly to the "Occupation treatment of the insane," the fact remains that many, and permit me to say, far too many, can report no greater diversity of employment, nor more methodical application of this form of treatment, than was done fifty years ago.

"That this state of affairs exists is not due, as I have said before, to any serious doubt as to the value of this method, but rather to an imperfect appreciation of its inestimable value as a means of treatment, regardless

of its economic features. Others factors, such as imperfect appliances, insufficient appropriations, the disinclination of patients to work, the fact that the patient knows that he cannot be compelled to work, and, most important of all, the lack of tact on the part of the medical officers of hospitals, enter into the arguments of those who would defend their inactivity in this direction, today, as they did many years ago. To those who have given the subject practical study none of these objections appear unsurmountable and many of them seem positively trivial. The rock upon which are wrecked many of the newly launched ships of industrial treatment is that of Economy. "Does it pay?" is the question most frequently asked by the visitors to our industrial department, and it is this question of profit and loss which is so prominent a feature in many discussions of this subject. As well might one ask does it pay to administer drugs, use the knife, provide skilled nurses and the various paraphernalia of a well-organized hospital. Industrial treatment of the insane does pay. When properly applied it pays enormous profits, profits which though they may not be visible on the credit side of the ledger, are yet in evidence in the wards of the hospital. The profit is to be readily found in the absence of large numbers of half or wholly demented patients lined up along the wall of the wards; in the healthy, cheerful faces of the patients in the quiet wards, the freedom from violence, destruction and vicious habits, so common in many hospitals."[1]

The reports of hospitals and the reminiscences of men who were in charge of hospitals also serve to confirm this view. Possibly hospital physicians had the opinion which was expressed to me in 1903 by the superintendent of a large state hospital who when asked if he employed his patients, almost indignantly replied that he did

[1] Occupation in the treatment of the insane. Transactions of the American Medico-Psychological Association, Vol. v, 1898, p. 288.

not believe in working sick people. He apparently did not realize that in condemning his patients to idleness he was doing them a great harm.

It seems probable, however, that the Civil War brought about more engrossing problems than medical care and that in many instances this was necessarily slighted. For many years there have been hospitals where work has been used intelligently, and we find leaders of pyschiatry advocating the use of work as a remedial measure. This is proved by the preceding quotations.

During the past ten years there has been a renascence of interest in the subject of work therapy. This was largely due to Miss Susan E. Tracy, whose book on Invalid Occupations was published in 1910. Following its publication it was quickly realized that occupation is one of the best of the means we have for aiding the recovery of the sick.

In psychiatry it has been recognized for a long time that the mental effort required to perform some task, or make some object, has had a beneficial effect in co-ordinating the mental functions, so that we often hear occupation spoken of as re-education. In more recent times in other specialties than psychiatry, re-educational efforts have been utilized for the restoration of impaired function. I am not so familiar with the literature of other specialties as with that of psychiatry, so cannot give such an accurate account of the development of occupation or re-education in these branches of medicine, but it is common knowledge that for nearly a century the blind have been educated to substitute other senses for the absent sight. Some of the things done by the well-trained blind appear almost uncanny to the seeing. Some years ago I made an inquiry[1] of the emotional reaction of those to whom blindness came in adult life and incidentally found many examples of how regular, pur-

[1] Mental State of the Blind. *American Journal of Insanity*, Vol. lxv, p. 103, July, 1908.

poseful occupation can improve the mental condition of such patients.

It is also quite well known that for many years neurologists have sought to re-establish function in paralyzed or partially paralyzed limbs by the use of re-educational exercises. A great deal of benefit frequently follows these measures. More recently Dr. William J. M. A. Maloney[1] and Dr. Shepherd Ivory Franz[2] have emphasized the psychic factor in this form of re-education.

During the present Great War very active measures have been undertaken for the re-education of the crippled soldiers in order that they may be restored to at least partial activity and self-support. Many ingenious

[1] Maloney, William J. M. A. Blindness and Tabes. *Journal of Nervous and Mental Diseases*, Vol. xl, No. 9 (1913).

Fear and Ataxia. *Ibid.*, Vol. xl, No. 11 (1913).

The Cure of Ataxia. *New York Medical Journal*, Vol. xcviii, p. 1045, November 29, 1913.

The Mechanism of Mental Processes as Revealed in Reckoning. *Journal of Psychology*, about March, 1914.

Determinants of Tabes. *New York Medical Journal*, Vol. xcix, p. 1225, June 20, 1914.

Maloney and Sorapure. Relief of States of Vascular, Muscular and Mental Tension. *New York Medical Journal*, Vol. xcix, p. 1021, May 23, 1914.

Ibid. Note on Mechanical Support of the Feet in Locomotor Ataxia. *Medical Record*, Vol. xcix, May, 1914.

Other papers in Journal of Nervous and Mental Disease on apparatus for recording and curing motor disturbances of head and of respiration. Grossman has written on the use of the method in tics and chorea. Pollen and Abrahamson on its application to functional motor disorders, and Wolf on its use in ataxia.

[2] The Possibility of Recovery of Motor Function in Long-standing Hemiplegia. A Preliminary Report. *Journal of the American Medical Association*, Vol. lxv, pp. 2150–2155, December 18, 1915.

The Effects of Cerebral Destruction upon Habit-formation and Retention in the Albino Rat. *Psychobiology*, Vol. i, pp. 71–134, September, 1917.

The Retention of Habits by the Rat after Destruction of the Frontal Portion of the Cerebrum. *Psychobiology*, Vol. i, pp. 3–18, July, 1917.

appliances have been devised and a tremendous impetus has been given to this form of re-education or occupation.

Occupational therapy has also been applied to the tuberculous[1] and to cardiacs.[2] In both of these groups it has been found that by carefully graded exercises the patients may be assisted materially in gaining their physical health and become to a greater or less degree economic assets rather than liabilities.

As may be inferred from the foregoing it is a very simple matter to trace the development of occupational therapy from simple tasks and amusements to the more scientific occupational therapy or re-education which is applied to practically all forms of mental and physical disability. There still remains much to be done, however,

[1] Barton, George Edward. Occupation and Auto-inoculation in Tuberculosis. *The Trained Nurse and Hospital Review*, September and October, 1916.

Brown, Philip King, M. D. The Potteries of Arequipa Sanitarium. *The Modern Hospital*, Vol. viii, June, 1917.

Dumarest, Dr. F. et Dr. A. Vigne. Organization et mise en oeuvre d'un cure de travail dans un sanitarium populaire. *Paris medicale*, 1916, Vol. vi, No. 30. Abstracted in *Modern Hospital*, Vol. ix, p. 142, August, 1917.

Famenne. Le travail manuel agent de therapeutic physique. *Journal de Physiotherapie*, Paris, 1910, Vol. viii, pp. 551–558.

Farrand, Dr. Livingston. Occupation in Relation to Tuberculosis. Proceedings of Sixteenth Annual Convention of American Society of Superintendents of Training Schools for Nurses, 1910, p. 201.

Ford, James S., M. D. The Employment of Persons in the Arrested Stage of Tuberculosis. *Medical Record*, Vol. xc, p. 1154, December 30, 1916.

Patterson, Marcus. Auto-inoculation in Pulmonary Tuberculosis. London, James Nisbet & Co.

Stein, Fred M. Family Care of the Tuberculous. *Journal of the Outdoor Life*, Vol. xiv, p. 135, May, 1917.

Hochhauser, Edward. Home Treatment for the Tuberculous. *The Modern Hospital*, Vol. viii, p. 207, March, 1917.

Report of the New York Committee on the Care of the Jewish Tuberculous, 1916.

[2] First Annual Report of the Trade School for Cardiac Convalescents, July, 1913–July, 1914.

Second report of same, July, 1914–January, 1916.

before ergotherapy can be considered as an exact science. Fortunately, there is a much wider interest in the subject and many persons are studying it. As can easily be imagined, there are many difficulties, but psychologic methods are gradually conquering them. A decided step was made by Miss Helen Grace Kent in her paper entitled "Experiments in Habit Formation in Dementia Præcox," [1] but as yet only Boring has had the patience to make a similar investigation of any of the crafts. Besides measuring the attention by means of the reaction time it is necessary to have some sort of gauge for the emotions, and so far no such standard has been formulated. Fatigue also enters into the problem and while considerable study has been done upon this subject, there is yet much to be learned. The work of Mosso[2] is probably the best for our purpose but there are many others, among them Fatigue Studies[3] by Mr. and Mrs. F. B. Gilbreth.

The subjects of Miss Kent's investigation were women patients at the Government Hospital at Washington, who at the first interview gave promise of co-operation. The experiments were (*a*) the arrangement of digits

[1] *The Psychological Review*, Vol. xviii, p. 374, November, 1911.

[2] New York, 1916, Sturgis and Walton.

[3] Fatigue. Translated by Margaret and W. B. Drummond. New York, 1906, G. P. Putnam's Sons.

See also The Mental Symptoms of Fatigue, by Edward Cowles, M. D. Transactions of the New York State Medical Association, November 16, 1892.

Normal Performance in the Tapping Test Before and During Practice, with Special Reference to Fatigue Phenomena, by F. L. Wells. *American Journal of Psychology*, Vol. xix, pp. 437–438, October, 1908.

A Neglected Measure of Fatigue, by F. L. Wells. *American Journal of Psychology*, Vol. xix, pp. 345–358, July, 1908.

Mental Fatigue, by E. L. Thorndike. *Journal of Educational Psychology*, Vol. ii, pp. 61–80.

Mental Fatigue in Day-school Children, as Measured by Arithmetical Reasoning. *British Journal of Psychology*, Vol. iv, pp. 315–341, 1911.

The Nature of Fatigue, by F. S. Lee. *Popular Science Monthly*, Vol. lxxvi, pp. 182–195, 1910.

mounted on cardboard squares according to a fixed scheme, (*b*) a maze puzzle, (*c*) marking similar figures, (*d*) placing twenty pegs in holes, and (*e*) re-arrangement of ten blocks. The results are carefully analyzed and the following conclusions are given:

"Definite practice effects can be obtained, by means of a short series of tests, from advanced cases of dementia præcox.

"The willingness of the subject to co-operate constitutes an important variable. The means employed for obtaining the co-operation of insane subjects must be adapted, to some extent, to the individual.

"The importance of giving a patient special training as to the proper method of performing a given task is clearly indicated by the failure of these subjects to devise economical methods.

"Practice effect gained in one kind of work appears to be to some extent transferable to another kind of work which differs from the first in its perceptual, but not in its motor aspects.

"In any attempt to establish a new habit in a patient, it is well to take advantage, as far as possible, of habits already present.

"There are indications that some of the energy ordinarily expended in mischievous performances may, by careful training, be directed into more favorable channels (subject 14). These findings offer some promise that results of practical value, both economic and therapeutic, may be obtained by an extension of this investigation."

Following is a part of the general considerations:

"During the first two weeks of the experiments with the first group of subjects, several of them were regularly brought from another ward to the ward in which the tests were conducted, and while waiting for their turn they occupied a seat in the corridor, just outside the door of the experimenting room. Later these patients were transferred to this ward, and for several days they

could with difficulty be induced to leave that seat; even subject 1, who was considerably disturbed by the change, remained in that part of the corridor for some days, and was regularly found there waiting for her turn.

"Several subjects showed a tendency to resent the most trifling deviations from the routine of the test period, such as a change in the order in which different tests were presented. Subject 4 was greatly displeased when she was called away from her daily work of scrubbing the floor. Subject 2 was considerably disconcerted by the request to perform the tasks in an unaccustomed place. On one occasion, subject 9 was called to the experimenting room ahead of the patient who had preceded her at the last few interviews; she protested that it was not her turn, and when asked what difference it made replied that everything should be done in order. Another time she said, "I can't take my lesson today, because I didn't have my bath this morning; the bath has to come first." She was with difficulty persuaded to perform the tasks, and gave a very poor record. Both this patient and also subject 3 were displeased when the experiments were discontinued."

It should be noted that nowhere does Miss Kent make any special comment on the value of enlisting the patient's *interest*, which those who practise occupational therapy recognize as a most important factor. The word occurs but seldom, as follows: "The tasks which were assigned to them possessed little or no intrinsic interest." "Subject 1 . . . After a week or two the patient adapted herself to the ward, but her interest in the experiments was lost, and throughout the series her co-operation was variable. At the time when experiment *C* was commenced she was in a favorable mood and showed much interest in the preliminary tests." "Subject 11 . . . At first gave very good co-operation, evidently hoping that the results would prove her to be in good mental health. Gradually, as she

began to realize that this was not the purpose of the experiment, she lost her interest in it." "Subject 14 . . . She apparently lacked either the intelligence or the interest to undertake tasks which called for voluntary attention."

It is easily conceivable that tests more stimulating to the patient's interest might have been used, and, in fact, Miss Kent did make slight use of a puzzle picture and of hemming, but it is to be regretted that the study was not carried on further with these or other interesting occupations. Even so, it is a most valuable one.

During the summer of 1912, Mr. Edwin G. Boring, Assistant in Psychology at Cornell University, made a study somewhat similar to Miss Kent's, upon eight subjects at the Government Hospital.[1] All of these patients, with the probable exception of one, were cases of dementia præcox. Mr. Boring, with the advantage of Miss Kent's pioneer work, made a more complete study of habit formation. A radical difference in the interpretation of data was due to the "availiablity of additional information furnished by the introspections" which the subjects were trained to give. It is notable in this report that much more attention is paid to the interest shown by the subject, and the final test of rug making was changed in order to add interest. "The experimental rugs were made 32 by 18 inches. It was planned to make them perfectly plain without any pattern at all, in order that they might be equally difficult throughout. After commencing work, however, it was discovered that the work was so monotonous that the subjects before long grew tired of it, and it soon became a question whether they could be kept at it long enough to finish the rugs. Accordingly, a pattern was introduced in order to stimulate interest and, later the pattern was complicated somewhat for the same purpose."

There was a preliminary training period of two weeks, during which the subjects were given the following tests:

[1] Learning in Dementia Præcox, Psychological Monograph, No. 63.

1. GENERAL TESTS

(*A*) *Attention with Simple Stimuli.*—A series of 150 digits was read at the rate of two per second to the subject, who was instructed to tap on the table whenever the digit 3 occurred, which it did 25 times. This test is outlined by Franz.[1]

(*B*) *Memory Span.*—The immediate memory span for a series of digits was tested with both auditory and visual stimuli. For the auditory presentation the numbers were read to the subject at the rate of two per second; for the visual presentation black gummed letters on a light gray cardboard slide were presented one after the other through a window in a cardboard slide holder at the rate of two per second. The subject was in each case, first presented with two series of three digits each, then two series of four digits each and so on up to ten digits. The memory span was taken as the greatest number of digits correctly repeated, although the first mistake may have occurred for a smaller number.

(C) *Apperception Tests.*—The Heilbronner test was used in which the subject is presented with a series of cards with drawings upon them. The first card has in bare outline the principal parts of an object, the next is slightly more complete, the next more so, and so on to the last card, which bears the object completed with enough detail ordinarily to insure recognition. Series were used with pictures of the following objects: bicycle, fire-place, fountain-pen, lamp, phonograph, telephone, watch and wind-mill. The subject was asked to state what he thought each picture represented or, if he could not do that, to describe what he saw.

2. DIRECTIONS TEST

In order to obtain some insight into the ability of the subjects to understand and to act upon the simple instructions, they were given the standard "directions

[1] Handbook of Mental Examination Methods. Nervous and Mental Disease Monograph Series No. 10, 1912, p. 71.

tests" prepared by Woodward and Wells.[1] There are two of these, the easy and the hard, for the first of which two blanks are provided of approximately equal difficulty. These directions and similar ones are given: Write any word of three letters, how many t's are there in twist, write s in the middle square (three being shown), write any number smaller than 10, write here . . . the middle letter of get. In the hard directions test the object is to complicate the directions somewhat, by calling for conditional and alternative responses. These directions begin as follows: With your pencil make a dot over any one of these letters F G H I J, and a comma after the longest of these three words: BOY MOTHER GIRL. Then if Christmas comes in March, make a cross right here . . . but if not, pass along to the next question, and tell where the sun rises . . . If you believe that Edison discovered America, cross out what you just wrote, but if it was some one else, put in a number to complete this sentence: "A horse has . . . feet."

Both the easy and the hard tests were given, the two halves of the easy test being given on different days. All the subjects could read and write, although some hesitated slightly and tended to misread when they did not understand the question.

After these preliminary tests two tests of motor control were given. The tapping test, designed to measure the greatest speed at which a simple muscular movement can be performed. The subject making pencil dots for 30 seconds. The aiming test was given to measure the accuracy of a simple muscular movement and to determine its dependence upon the speed of the movement.

Then followed three tests of learning, a kinesthetic memory test, cancellation tests, and maze tests. The latter were somewhat different from those used by Miss Kent. The size used is not given in either of these studies.

[1] Psychological Monograph, 57, 1911.

The final tests were with learning to make hooked rugs. At first the subjects worked alone but were later allowed to work together in a large room. Two and a half hours each afternoon were given over to the work. Apparently no note is made of a diminution in output during the latter part of this period, but I believe that it was too long for such monotonous work.

This study is a most valuable and interesting one and I regret that space does not permit a fuller abstract. The conclusions given are as follows:

"1. Dementia præcox patients, can be readily trained in the performance of simple tests of learning or of more complex operations of an industrial nature.

"2. These patients are available as subjects for psychological investigation, provided the apparatus used is not too complicated. They can be trained without great difficulty to give introspective reports of the more prominent features of conscious experience.

"3. The patients show large individual differences in ability to learn the operations, in manner of procedure, and in the consciousness accompanying the performance.

"4. The patients are capable of fairly precise motor adjustments. The accuracy of a very simple motor adjustment does not increase with practice, but does depend upon the extent and the speed of movement. In the latter case accuracy decreases more rapidly than speed increases.

"5. There is but little evidence for transfer of practice from an operation that is but slightly motor in character.

"6. The course of consciousness in learning a maze s that of the normal subject. Verbal, visual, and attitudinal factors are usually replaced by kinesthetic, which in turn lapse as the movement becomes automatic.

"7. There is indication that employment may be beneficial to some patients, although this cannot be asserted positively.

"8. The patients are capable, in simple industrial

operations of a quality of work, sufficiently good to be commercially valuable."

For a number of years Professor Harry L. Hollingsworth, of Columbia University, has been making experimental and comparative studies of the various methods now used in selecting a vocation.[1] One would expect to find much aid from work of this sort in applying occupational therapy to our patients. Unfortunately we do not. Let me make a few quotations. (p. 269) "The evidence now at hand suggests that the incomplete correlation comes, in part at least, from the fact that some of the tests of momentary achievement do not fully represent the ultimate capacities of the individuals measured." If this is true of so-called normal individuals, the same error will be greatly increased when we are dealing with those sick in mind or body, hence such methods will have a proportionately lower value. (p. 272) "But there is probably another factor in part responsible for the incompleteness of the correlation between test records and direct measures of vocational success. This is the fact that characteristics other than general intelligence play a conspicuous part in daily life. The interests, the incentives, the emotions, and the equipment of instinct and habit, which show themselves in such traits as curiosity, competition, honesty, loyalty, promptness, patience, the play impulse, etc., do not count for nothing in vocational activity." (In my opinion, they count for a great deal, especially interest, which I consider is largely if not entirely, controlled by the emotions, the incentive, and habit.) "Moreover, it is quite likely that, in addition to the common fund of intelligence, each individual possesses in his or her own degree, certain more specialized capacities and aptitudes, for the complete measurement of which the available tests are inadequate. The graded "product scales," however,

[1] Vocational Psychology. Its Problems and Methods. New York, D. Appleton & Co.

represent a definite step toward the measurement of many of these specific capacities." "The diagnosis of the instinctive and attitudinal characteristics and the recognition of the more specialized aptitudes constitute two points at which the line of advance is relatively slow."

"The very fact that a systematic presentation of the problems and methods of vocational psychology is possible signifies an enormous advance beyond the very recent stage in which all vocations were mysteries, all choices a serious form of gambling, and all employment confessedly a matter of impressionistic prejudice. To those who become familiar not only with the program of this new branch of applied science, but as well with the outstanding definite and positive contributions which that program has already yielded, the words of a constructive pioneer in this branch of scientific inquiry seem to be already becoming a statement of fact, rather than the mere expression of a hope. 'The nineteenth century witnessed an extraordinary increase in our knowledge of the material world, and in our power to make it subservient to our ends; the twentieth century will probably witness a corresponding increase in our knowledge of human nature, and in our power to use it for welfare.'"

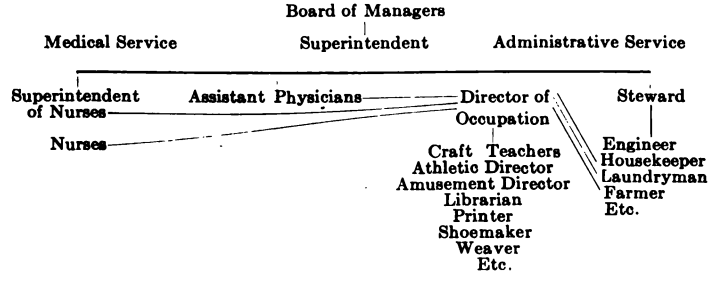
It may be gathered from the above that Professor Hollingsworth has given us a very suggestive book, though perhaps not so helpful as might be desired.

With the recognition of the value of occupation therapy a demand has arisen for persons qualified to direct such treatment. While a number of training schools for nurses, connected with both general and mental hospitals include a course of occupation in the curriculum, as a rule it is not possible to make this course sufficiently complete to enable the pupils taking it to acquire sufficient knowledge of the subject to qualify for the position of director of occupations or of industries. Then too, it is easily conceivable that those in charge of

hospitals might hesitate to appoint to such a responsible position a person as young as are most of the recent graduates of training schools, so that in the past the preference has been to appoint one of the senior physicians to direct the occupations and industries. As a rule, experience has taught the physician much of value.

This book has been written to aid aspirants and also with the hope that the principles here laid down will be of benefit and be an aid to those who may be suddenly called upon to assume the duties of occupation director, and that the results of the experience of others detailed here may be helpful.

We will assume that an assistant physician has been told by his superintendent that he is to take charge of the occupation therapy. He naturally asks what this means, of what does this consist, and what are to be his duties. We will also assume that the hospital is a large one, with a number of so-called industries, and a training school. The duties of the various officers might be charted as follows:



From this it will be learned that the Director of Occupation is responsible to the Superintendent for the conduct of this department. That the various Craft Teachers, those in charge of the various industries, the Athletic Director, the Amusement Director, and the Librarian are all responsible to the Director of Occupation for the conduct of their departments. That the Director of

Occupation is in close accord with the Superintendent of Nurses and those under her, and with the Laundryman and the Farmer. The work of these last two is not usually carried on as a means of occupation and when used as such can only be expected to be utilized for the willing workers. The farmer and the laundryman cannot take the time to persuade the unwilling or show the stupid what is desired of them. On the other hand the crafts, industries, and amusements are conducted solely as means of occupation. The Superintendent of Nurses must be in close accord with the Director in order that her pupils may be taught the most necessary principles in caring for patients, and the nurses must feel free to consult with the Director as to the means of carrying out these principles in individual cases.

Later we will discuss in detail some of these relationships. It is very necessary that there be a complete understanding between the heads of departments having reciprocal relationships in order that petty jealousies and clashes may be avoided. This necessity, of course, is not limited to occupation if our institutions are to serve best the function for which they have been created, but occupation necessarily calls for the co-operation of more departments than does some others. It is believed that the use of charts similar to that shown will do much to clear away any misunderstandings and so avoid friction. If every worker would take to heart Ali Baba's saying: "People who never do any more than they get paid for, never get paid for any more than they do," there would be a more altruistic spirit in this world, no labor troubles, and human efficiency would increase several hundred percent. It is the shirker who clogs the wheels of progress. When we read the lives of successful people we know that they have succeeded because they have tried to do more than was expected of them. They waited until the whistle blew before they put away their tools, while the unsuccessful man is he who had his coat on before

it stopped. To express the same idea in another way, the person who is working for himself may have immediate success but after a time the unselfish person easily outstrips him in the race to success. *Esprit de corps* must be well developed in our group of occupation workers if the work is to be truly successful. It is important to emphasize that occupation is a therapeutic measure and should be carried on in a way most helpful to the patient. The monetary value of his work is a minor consideration, not to be ignored for many reasons, the chief of which is the good effect upon the patient when he knows that he is producing something of value. The patient's mental welfare, however, should not be sacrificed by the cultivation of stereotyped habits because he has shown special ability in the making of a particular article.

It is unfortunate that some hospital superintendents cannot see the benefits which may be derived from occupation properly carried out and will do little or nothing to aid the work. In a hospital where such a man is head it is impossible, of course, to formally organize the work as has been suggested above, but if a physician or nurse is really a believer in occupation therapy it is always easy to so employ the patients that a demonstration of a more quiet ward with a more rapid improvement in individual patients may serve as an object lesson to any but the most bigoted. After the prejudiced superintendent has been convinced it is usually possible to inaugurate a more formal organization of the work.

It is well not to attempt too much in the beginning, and to be content to grow slowly. The organization of classes of various sorts in the wards may perhaps be the initial effort, followed by other occupations which require that they be carried on in shops located away from the wards. Local conditions will necessitate particular arrangements so that it is impossible to give specific directions for inaugurating occupational work here, but as a rule it is best to begin occupation for women in

some such fashion as has been suggested by Dr. Mary Lawson Neff (see p. 62). Dr. Neff has had an unusual experience in systematizing occupational work in state hospitals and speaks with the voice of authority. Men may be started in small groups at outside tasks such as the care of certain parts of the grounds or various chores. Individual patients may be induced to take up some special craft such as crocheting or knitting for the women, or whittling for the men. The example of these may be contagious so that a class may be formed. From such a beginning the development of other crafts often follows. If one has thought much of occupation and has even in part mastered its principles but few suggestions are required to point the way to its inauguration.

CHAPTER II

WHAT OCCUPATION IS

It is emphasized that anything that diverts the patient from unhealthy thought is to be classed as occupation. Various names are given, such as occupation, diversion, diversional occupation, occupational diversion, occupation and amusement, employment, work cure, occupational therapy, and ergotherapy (ἔργον = work; θεραπεία = therapy). The last is probably the best, and certainly the most scientific term, but as yet has not come into sufficiently general use, and the more simple term occupation will probably be used for some time. As has been shown in the foregoing chapter the term occupational therapy is also applied to physical exercises which have as their object the development of impaired functions, but it has also been shown that even here the mental side is important.

Recently there has been a tendency to specialize this subject and it may be said to be divided into invalid occupation, occupational therapy, and vocational and revocational education.

Invalid occupation may be defined as consisting of the means employed to make the invalid contented and so more co-operative, and which have no further object, such as mental or physical training. It is intended chiefly to divert and amuse, keeping the mind of the patient from dwelling upon his illness and possibly developing hypochondriacal ideas. In certain cases, therefore, the means of invalid occupation may become of therapeutic importance.

Occupational therapy has as its object the restoration of physical or mental functions by means of carefully planned work, exercise or amusements. It aids in the

recovery of disturbed mental functions by training in concentrating attention, stimulating association, and diverting from unhealthy thoughts.

By vocational education we mean the training necessary to enable the individual to pursue a gainful vocation. In the case of the crippled this means that remaining limbs must be educated to assume the functions of those missing, as when a right-handed individual learns to use his left for the same movements, or where a laborer is taught a trade, etc. Theoretically it is not the function of the ergotherapeutist to carry on vocational training, but as the ordinary vocational technician has not the special knowledge necessary to develop either the physically or mentally handicapped, it is necessary for the occupation teacher to train the patient in the fundamentals of a craft or vocation and so fit him to be capable of receiving instruction from the technician.

Revocational education means that the patient is taught the best and most efficient methods of using his natural capabilities, or the use of prosthetic appliances and other apparatus, in order best to pursue a former vocation. The so-called amusements are sometimes the best means of stimulating a patient's mental activities. For example, those in charge of institutions having libraries wonder how it was ever possible to get along without one, and Miss Edith Kathleen Jones, who has done more to impress the value of the library as a remedial agent upon us than any other one person, has written as follows:

"The Superintendent of one of our large private hospitals for the insane recently made the remark that if he were obliged to give up either the library or the handicrafts department, he would unhesitatingly choose to keep the former. His reason was this: That there are always many patients who cannot be roused to any great interest in arts and crafts work, while there are very few who will not read, or at least look at books of pictures."

While this is perfectly true for our private or incor-

porated hospitals it must be remembered that in our state hospitals there are many patients who care nothing for reading, and some who do not know how to read. Occupation may be quite as valuable a therapeutic agent in these cases as in the better educated but other means than the library must be found for applying it. Fortunately, there may be many other places of amusement, such as the baseball diamond, bowling alleys, gymnasium, etc. When used intelligently and in such a way as to create interest in them, these may be of such value in arousing the interest of patients and diverting them from their morbid thoughts that the physicians wonder how it was possible that patients recovered without them.

But all of these places may have little value unless they are in charge of persons who have a keen interest in the success of their especial department and an enthusiasm that is contagious. The Director can and should do much to stimulate such enthusiasm.

In the Standard Dictionary there are several definitions given under the word occupation, one of which is as follows: "3. The state of being employed, occupied, or kept busy in any way; as, continual *occupation* is wearisome." This definition is an excellent one for our purpose and we may well adopt as our motto "Keep busy." The excellence of this last was impressed upon me not long ago by a former patient at the Sheppard and Enoch Pratt Hospital who came to us suffering from an attack of depression. After much urging she was finally induced to do things which quite rapidly brought about an improvement.

In a letter the patient says: "Dr. Dunton, I wish I could see, and talk with you, now that I am well, and tell you how above all things else, I believe the "Keep busy all the time" plays the most important part in restoring your patients to normal health. I shall never cease to thank you for your part in getting me interested in work."

But with this divertisement let us return to the dictionary and take up the remainder of our quotation. "Continual occupation is wearisome." So it is, we willingly admit it, and when our therapeutic occupation becomes wearisome it defeats its own aims. How this may be avoided is considered more fully on the following pages, so that it need not be taken up at present, but it may not be amiss to discuss here of what in general a normal man's or woman's life should consist. It simplifies matters if we admit that in the partnership known as marriage the man is in charge of the activities which lead to a gainful income, the woman is in charge of those activities which lead to a disbursement of a whole or part of the income for the purposes of supporting life, etc., and that each partner is equally important economically considered. Each partner has certain routine duties: first, those connected with personal care, such as washing, dressing and eating; second, those concerned with the welfare of others, such as household tasks or business details. Of the first, it is possible to make them pleasant or the reverse. The same may be said of the second which may require a considerable personal effort to keep from becoming somewhat stereotyped. The first, however, are more apt to become automatic acts and for this reason cause less mental fatigue. One's daily duties also require a certain amount of social intercourse. In a rather crude way this sums up an individual's daily life. It may be like that of the milkmaid's in the comic opera,

> "Her life's one endless round, 'tis said,
> Of rising and working and going to bed."

It takes but a little thought to convince one's self that this is true for every station in life. For the primitive man and woman as well as the most cultivated.

In order that one's life should not become such a dull affair we must order it in some fashion. The housewife, whose routine duties are partly mental and partly

manual and of such a nature that they may easily become automatic, must have diversion by other occupations which give a change such as a study of some author, artist, or other intellectual diversion either by herself or with others, as at her club or society, and some manual diversion such as embroidery, or some similar work which requires more concentration of attention, and therefore arouses greater interest than does the more automatic plain sewing which is a part of her housekeeping duties.

The man's routine duties as a rule are less diversified than the woman's, and his recreations, therefore, should be more positively either manual or mental than the woman's. For example, a lawyer's or an editor's work is chiefly mental and his recreation should therefore be some physical activity such as golf, tennis, horseback riding, or gardening. A hod carrier on the other hand should be encouraged to take up a reading course which will develop him into something more than the machine which his work tends to make of him.

To recapitulate these somewhat discursive remarks, a physical occupation should have its antidote in mental work and *vice versa*. While much more might be said on this subject it is believed to be unnecessary to those who are at all familiar with occupational therapy. To those who have neglected its study and who may be unconvinced by the above even after an examination of their own experience, I would suggest that a brief study of the subject be made, as I am very sure that no one can conscientiously investigate the results that have been achieved by means of this method of treatment without being convinced of its efficacy. This is not to be wondered at when we realize that the work cure is really but a method of bringing the patient back to a normal way of living. The French have a delightful little poem which has been translated by Du Maurier in Trilby, as follows:

A little work, a little play,
To keep us going—and so, good-day!

A little warmth, a little light,
Of love's bestowing—and so, good-night!

A little fun to match the sorrow
Of each day's growing—and so, good-morrow!

A little trust that when we die
We reap our sowing! And so—good-by!

This very charmingly sums up of what our lives should consist, but they may be amplified if we "hitch our wagon to a star," ever keep it in sight and plod *patiently* toward it. We may reach our goal sooner by striving harder, by concentrating on one thing, but it will be at the sacrifice of something. The man with the broad view of life which comes from reading on many subjects, and learning to do many things, may never achieve the fame which another reaches through concentrating all of his energies upon the mastery of one subject, but existence will hold much more of happiness and in the afternoon of his life he is not so liable to feel weariness and lack of ambition. As some one has quaintly said regarding a general interest in a number of things "When I break my doll I still have mud pies to play with." It is a fairly common thing for psychiatrists to have under their care men in the forties who have achieved the height of their ambition, usually business success, and who realize that their limitations prevent their going higher. Having no other interests, life becomes a dull routine, like the milkmaid's, and they suffer an attack of depression. Had they taken a broader view of life with wider interests the attack might have been avoided. Such individuals have to learn "how to live." That is the essential part of their treatment. Occupation by broadening their interests, is naturally the best method of accomplishing this.

Even at the risk of making myself wearisome, I cannot leave this subject without quoting from a splendid article by Dr. John H. Finley on "The Wisdom of Leisure"[1] which should be read by everyone desirous of making the most of his life. He says: "We all have or should have a triune day: a "work day" in which we do our share of the world's work, a "sleep day" in which we must physically rest, and a "leisure day," which is as long as either of the others for most people, if they but knew it, a third day in which to cultivate our real selves, to approach our "possible perfection."

"And I repeat an observation which I have often made, that the real test of living is what we do with the third of these days, which is so frequently, almost generally, looked upon as the idle margin of the "work day" or the drowsy margin of the "sleep day."

"We cannot doubtless (despite the reported experience of a nameless Harvard professor), shorten much our "sleep day." We cannot perhaps, shorten much our "work day," unless indeed we are willing to live more simply. It remains to make the most of our "freedom day," to practice intellectual, moral, spiritual efficiency here even as we attempt higher economic efficiency in the "work day."

"Most of us waste enough leisure time to make ourselves great musicians, artists, scholars, poets, able to minister our avocation to human happiness even beyond that which we can do in our vocation."

[1] *The Playground*, Vol. ix, p. 335, January, 1916.

CHAPTER III

THE QUALIFICATIONS OF AN OCCUPATION DIRECTOR

The qualifications necessary to make a good occupation director are many and cannot be simply told. He must have a vast amount of patience if for no other reason than to serve as a shining example to the various teachers who work under him. If he does not possess patience he is apt to be too anxious to show results and to be discontented with the slow progress that is necessary for the proper restoring of mental and physical functions which comes through work. This discontent is easily and unconsciously transmitted to the teachers. He must possess a considerable knowledge, in theory at least, of many crafts and occupations in order that the patient's interest may be attracted and their occupation prevented from becoming toil. Tact is, of course, a necessary qualification in every physician but is even more necessary in the occupation director. He must possess what is called business ability in order that his department may be conducted as economically as possible, so that the powers that be will not shut down on this most important therapeutic measure. Above all he must possess what has been called "the precious gift of inspiring others," for occupation cannot be carried on single handed and unless this gift be his those assisting the director will be unable to do their best.

Depending upon whether his duties are in a mental or physical (orthopedic) hospital will it be necessary for the director to specialize in methods which will stimulate mental or physical functions. When dealing with mental or nervous patients he must be a good psychi-

atrist that he may know what mental functions are most impaired and how they may best be restored. On the other hand, the director who is chiefly concerned with the restoration of physical functions must specialize upon what is known as kinesitherapy (κινησις = motion, θεραπεια = cure) or treatment by movement. This last has come into considerable prominence during the Great War and is discussed briefly in Chapter XII. It is extremely important, however he may specialize, that the occupational director know something of psychology, and especially of that part which deals with reactions and mental adjustments. This is quite as necessary for the one dealing with physical as with mental cases. I have recently (1918) seen a man eminent in vocational training make a failure of occupational therapy in a government hospital, chiefly, I believe, because he did not know enough of the psychology of every-day life to present the subject properly to the patients. Some persons seem to acquire this knowledge of reactions and adjustments without any formal study of psychology, in which case we usually say that they have tact. Others must acquire this by training and study.

The above are the main requisites of an occupation director, but the possession of a fertility of invention, a vast amount of energy, an artistic sense of form and color, and other faculties which tend to make him a broad-minded, cultivated man will enable him to fill his position, rather than merely to occupy it.

It seems needless to say that it is essential for the director to have a strong interest in this form of therapy; for without it he cannot have that precious gift of inspiring others, and the different forms of work will lag and become stereotyped in character. This last is a defect which must be constantly guarded against and the director must be ever alert to stimulate his assistants with suggestions of special methods to be used with certain patients in order to arouse their interest as

quickly as possible, of solutions for various problems, and in many other ways to keep active the interest of those who are aiding him.

He must have fertility of invention in order that he make suggestions for occupying patients who have perhaps done many things without showing any interest in them. In such cases it is necessary to keep on trying something new until at last the work is found which engrosses the patient's attention and so stirs up interest. This may be something bizarre, something familiar or something unfamiliar, something difficult or something extremely simple. The following experience serves to illustrate this. A woman with anxious depression was extremely difficult to occupy. One day I asked her as a personal favor to fold some papers for me and the nurse noted that she seemed to be interested, so that when material was present she was always asked to do this work. As often happens, the patient then developed the idea that the folding was not to serve a useful purpose and was only being given her to keep her occupied. Considerable protestations on my part did not seem to convince her, but when she saw holiday menus which she had folded in actual use and received a scolding for not doing other folding neatly, this idea disappeared. It was, however, difficult to find enough paper folding to occupy the patient properly so that recourse was had to other work. She was given a number of journals to take apart for binding, that is, remove the wire stitching, but could never be induced to do it. She would arrange the scrap books of amusement posters, and of menus, and seemed to take some interest in these, but nothing helped her so much as the paper folding, probably because she felt that here was something that she could do well. Later on as she improved she did some cross stitch work but frequently pulled it out because she feared it was not right, and still later did some crocheting. Unfortunately the patient was removed from care before convalescence was well

established and we were not able to further develop the work cure in her case. I often cudgelled my brain to devise paper folding for her in some form, and usually selected a holiday menu which required folding in order to keep her at work, besides trying to think of some other occupation which would interest her. I have seen some of my assistants work over other patients in the same way and have been asked to suggest some form of work which they should try.

The director should have some artistic sense of form and color; if for nothing else, to prevent the making of some of the horrible things which many patients desire to perpetrate. Such things give but little pleasure to anyone but the maker and may give æsthetic offense to many. They are also a waste of good material, which is not a minor consideration. It is usually easy to make suggestions which will not be offensive and which will educate the patient to better appreciate what is good in form and color. Often the bizarre attracts us by daring but we soon tire of it. Recent instances are the cubist and futurist styles of painting, and the so-called magpie decoration in which black and white are spatially equal and hence colorfully inharmonious. In every hospital, indeed in every community, there are individuals who delight in useless work, such as the carpenter who in his playtime made a full-grown chair by gluing toothpicks together, or the man who papered a room with cancelled postage stamps, or the more numerous individual who whittles still more numerous wooden chains from sticks of wood. Such work is soul clogging and therefore clogs the wheels of progress. In order to criticize and correct such nefarious practices the director must himself learn what is good, beautiful, and true by reading and observation. He must be careful not to be so strongly attracted to some particular school of art that he himself becomes a faddist, and so defeats the end toward which he has aimed, that of making himself broad minded and well informed. An

admirable exposition of the chief characteristics of beauty may be found in Mentor No. 102.

"No word in the language is more abused than 'beauty.' A pretty thing is a thing of beauty; a pretty picture is a thing of beauty; and so following. Lacking a proper descriptive term for anything attractive, we, too often, employ the word 'beauty.' What term have we then with which to pay tribute to true beauty?

"The real, final test of beauty is that it wears well—not in a material way, but in the qualities that are truly beautiful. The rose is fragile material and its life is brief, but rose beauty is lasting and rose fragrance clings sweetly to the memory—so that the rose has become a synonym of beauty. The message of true beauty is enduring and, oft repeated, grows in charm. 'A thing of beauty is a joy forever.'

"A distinguishing attribute of true beauty is authority. A thing of beauty bears on its very forefront the stamp of authority. It does not plead for recognition—it commands it. The snow-capped summit at sundown, the Madonna face on a master's canvas, the poet's 'lofty rhyme,' the fragrant flower, the harmonious symphony, the 'frozen music' of architecture—countless varied forms of beauty in nature, art and life ask no favor nor do they play to the fancy of the moment. Created in intelligence, sincerity and truth, and inspired by lofty devotion, they compel a lasting homage."

I feel that I have very inadequately expressed what I desire as to the qualifications of a director and yet do not wish to discourage anyone by what may appear to be rather severe requirements, for it must be remembered that local conditions may make one person extremely valuable whereas in a d fferent situation he may be a round peg in a square hole. It may be comforting to recall that not all holes are square, neither are all pegs round, and usually by wobbling about a bit pegs and holes will be fitted.

CHAPTER IV

THE DUTIES OF THE OCCUPATION DIRECTOR

As has been previously stated, the occupation director is usually one of the senior physicians whose years of service has brought to him a knowledge of the conditions and requirements of his hospital so that he is able to co-ordinate and direct all of the institution's occupational activities. While he may be keenly interested in the work, it may happen that these duties take up more time than can be spared from his other professional and administrative duties. On the other hand, if the director has not had a medical training it has been found that there will be a lack of sympathy between the medical staff and the occupational department so that this valuable therapeutic agent is not used so well as it should be. It is unfortunate that many physicians, usually the inexperienced, do not recognize the great value that well-regulated occupation may have in aiding in the recovery of their patients and do not take pains to prescribe it judiciously. For this reason alone, if for no other, it is believed that the director should be one of the senior physicians, who should at rounds, conference, and elsewhere, instruct the juniors as to the value of occupation and how it may be best applied. If necessary to curtail the director's duties, let it be those which are profitless to him and his patients, such as unnecessary interviews with the friends of patients and other routine work.

The fact should never be lost sight of that the function of the mental hospital is to heal sick minds, and that even those patients classed as chronic are susceptible of improvement by properly directed therapeutic measures. It is believed by many that occupation is the most valu-

able single agent in restoring the sick mind to its normal condition and it would seem not too much to ask that one of the best men on the staff be given direction of this valuable therapeutic measure.

On the physical side of occupational therapy, which has become more prominent since the Great War, the director can often substitute forms of occupation to take the place of the less interesting mechanotherapy. This will require that he make a careful study of many crafts and vocations, and especially of motion study that he may give to the patient work which will interest him and at the same time give the required physical exercise.

The director's first duty has already been stated, that of instructing the younger members of the staff in the value of occupation and how it is to be applied, showing them why one occupation may be best for one case and a different one for another. Just as the clinical director has oversight over all of the clinical work of the hospital and is the arbiter of all clinical questions, so should the occupation director have charge of all of the occupations and industries, and decide all questions concerning this method of therapy.

Elsewhere,[1] in a manual for nurses, certain rules have been given which are to be followed when patients are to be occupied. They are here inserted to emphasize the inference from the above that when occupation is used it should be done understandingly and not in a haphazard way. They are as follows:

1. The occupation should be new—that is, something to which the patient is not accustomed, in order to arrest and hold his attention.

2. One occupation should not be followed to the point of fatigue. A change of occupation may be the best form of rest, as throwing a ball or bean bag after sitting over leather punching, or taking a walk after being at work at a loom.

[1] Occupation Therapy. A Manual for Nurses. Phila., 1915, W. B. Saunders Co.

3. The work should be useful and the patient should be shown what this use is. Avoid aimless work.

4. It should preferably lead to an enlargement of the patients mental horizon, and a study and interest in associated things. It is for the reason that the nurse may appreciate the greater interest in an occupation, if such are known, that the historical and other facts have been introduced in this book.

5. The nurse should participate in the occupation and show an interest in it.

6. The patient should be encouraged by praise, and criticism should be given sugar coated.

7. It is better that the patient do bad work than none at all.

It is believed that these rules summarize the basic principles of ergotherapy and afford a convenient means of inculcating these principles in the inexperienced medical officer.

According to the interest and co-operation of his associates from the Superintendent down, the work of the director will be difficult or comparatively easy. If he believes that sympathy is lacking for his work he must remember that many persons are Missourians and that the burden of proof as to its value is upon his shoulders. If he carries on the work conscientiously and understandingly it will not be long before the results attained will convince the most skeptical.

He will next organize the various departments and shops and convince those in charge of them that the primary object of their existence is to get patients well. If the carpenter or blacksmith or plumber feels that he cannot be bothered with teaching and watching patients, and the superintendent has the same opinion, the director should eliminate all thought of using such a department as a means of occupation, and should substitute other industries or crafts to take their place.

Someone should be in charge of each of the industries and responsible for it. This person we may for con-

venience call the teacher, for such will be his or her chief duty. He should also keep a record of the patient's work, of his interest, power of concentration (attention), skill, etc., which record should form a part of the patient's history or record. In order that such records may be well kept the director should instruct the teachers in the principles of occupation therapy. These teachers should make out requisitions for supplies which should be approved by the director before being sent to the purchasing agent. It is believed by many that nurses make the best teachers on account of their training and better understanding of patients, even though their technical knowledge of the craft may not be equal to another who is not trained in nursing but has been well trained in a craft. It should be remembered that the primary purpose of occupation is to aid the patient's recovery and the development of craftsmen is of less importance. The question of the training of nurses in occupational methods is discussed in another chapter (p. 78).

The director should also arrange for the saving of waste from one department which can be utilized in another, and for its delivery. This subject and that of the disposal of manufactured products is considered more fully in Chapter VI.

The director should pay frequent visits to the various shops and encourage other members of the staff to do the same, both to personally observe how the patients work and what progress they are making, and to encourage both the teacher and the patients by their interest.

It is a good plan to have frequent conferences with the teachers (preferably on other occasions than the above-mentioned visits so that the work of the class will not be too much interrupted) in order that details of work and plans may be considered, and also that encouragement may be given, for it must be remembered that there is much about teaching and especially of mental cases that is discouraging. Results seem very slow in

appearing to those who are closely concerned with their development.

An occasional conference of the director with all of the teachers will have the effect of developing a spirit of co-operation. At this general meeting plans can be discussed and such a conference should always be held to arrange for the bazaar, at which the products of the shops are sold.

Teachers should be encouraged to visit other hospitals to observe their methods and also to study to improve themselves.

To sum up the main duties of the occupation director: Training the staff; Training the teachers; Arranging for the purchase of supplies, and the utilization of waste; Disposal of manufactured products; Supervision of the shops and conferences with the teachers.

To these should be added the direction of amusements and the occupational training of nurses. Both properly belong to the duties of the occupation director. In some hospitals it is found to be convenient to have one director of occupation for both men's and women's departments, in others that there be separate directors. It is quite possible for these two to work in harmony and sometimes to encourage a friendly rivalry which is inspiring to the teachers. As a rule, however, the occupations for men and those for women are different so that there need be no clashing of interests.

The work of the director may differ considerably in detail in the state hospital, in the incorporated hospital, in the private hospital and in the psychiatric clinic, so that some comment will be made on the differences which may exist in each of these as affecting the duties of the director.

THE STATE HOSPITAL

In a state hospital the number of patients is usually several hundred and the majority of them belong to the chronic class in whom recovery cannot be expected. It

has been found, however, that by proper therapeutic measures, and occupation is the most valuable, considerable improvement in the mental condition may occur so that an encouraging number can leave the hospital and live in their homes, or elsewhere, under some sort of after care. The occupation director, therefore, has not a hopeless task before him. The patient population comprises all classes of cases, even epileptics in the majority of states, so that there is ample opportunity to try out the effect of occupation in different psychoses. Another advantage is that the great majority of the patients are accustomed to manual work and there is not the necessity for so much urging to induce patients to work as exists in private and incorporated hospitals. There is the disadvantage that a great many tasks must be done which are of a routine character and which ordinarily do not help the patients who do them because they tend to become stereotyped acts. This tendency can be avoided by changing the patient from one such task to another at fairly frequent intervals. The director will also have difficulty in carrying on various forms of handicraft because of the lack of funds for this purpose. It is usual to find a number of so-called industries in state hospitals which may take the place of some of these handicrafts. It is unfortunate that in some institutions the desire to make a good showing and turn out a considerable quantity leads to an overstimulation of the willing so that the working periods are too long and the therapeutic value of the occupation is thereby lessened. Another unfortunate tendency is to put the patient to work at his trade rather than at something with which he is not familiar. As a consequence the patient thinks that if he is well enough to work at his trade at the hospital, he is well enough to do the same at the factory and so support his family. He can see no reason for his detention, is apt to consider himself a prisoner, and may develop persecutory ideas against the physicians. It is undoubtedly more trouble to teach shoemaking to a

weaver and weaving to a shoemaker than to allow each to work at his own trade, but the therapeutic effect will be greater. This rule must be broadly construed, however, for it is easy to conceive that a patient's self esteem and confidence in himself may be increased by the knowledge that he is as able to do skilled work as before he became ill. Instances are also quite frequent of patients who could not be induced to do anything until taken to the shops where they saw others making articles, and using tools with which they were formerly familiar. A rather amusing example was given by a speaker at a conference who told of a weaver who could not be occupied in any way. He would sit beside a loom apparently quite indifferent to what was going on about him. Finally, the worker next to him got into difficulties one day and was rather making a mess of things when the weaver rose to his feet, pushed the worker aside, and straightened out the difficulties. After this he became a steady attendant at the shop.

The start having been made, however, it is well to begin to cultivate the patient's interest in other occupations.

A model program to give variety, relieve monotony, and stimulate the mental activities of the patient might read something like the following:

7:00 A. M.	Breakfast.
8:00	Shop (weaving, shoe, broom, etc.).
9:30	Calisthenics, or a walk.
10:00	Work on farm or lawn.
11:30	Clean up for dinner.
12:00	Dinner.
1:00 P. M.	Shop (shoe).
2:30	Ball practice.
3:00	Shop (weaving).
4:30–5:00	Occupation on the ward.
5:30	Supper.
7:00	Entertainment.
9:00	Bed.

The above is merely intended as a suggestion and will have to be changed to suit the individual case and the convenience of administration.

Usually the industries do not attempt to supply more than the needs of the hospital, or others of the same state system, but occasionally the products of the hospital shops are sold in the open market. When this last is done there is great danger of losing sight of the therapeutic value of occupation.

Besides the work in shops, laundry, farm, etc., it is well to have facilities for occupation on the wards. Dr. Horace G. Ripley,[1] who is Director of Occupation at the Taunton State Hospital, is of the opinion that men patients should work in shops and women patients on the ward, because normally a man goes to his work away from his home, while a woman does her work in the home. This view would appear to be a very rational one and seems to be held by many others in charge of occupation. In visiting the state hospitals of New England one frequently finds looms in operation on the women's wards. Dr. Mary Lawson Neff,[2] who has done so much to develop occupation, has given a model program for ward occupation, as follows:

Monday morning: The Housekeeping Scouts.

The cleaning hour on Monday morning may be made to include some element of competition. Prizes for individual neatness may be offered, such as a beautiful picture to hang each week in the room of the patient who has the best record for the preceding week. The members of the ward family may be divided into two rival companies of "housekeeping scouts," each with a leader, and some reward or recognition made an object of competition.

Monday afternoon: Phonograph Concert.

Tuesday morning: Library Hour.

The library hour on Tuesday morning should be used

[1] Ripley, Horace G., M. D. Should Occupation be Limited to Work Rooms, or Distributed About the Wards? Transactions of American Medico-Psychological Association, Vol. xxii, p. 335.

[2] Neff, Mary Lawson. A Model Program for a Ward in a State Hospital. *Bulletin of Iowa State Institutions*, July, 1914.

to increase to the utmost the real value of the library and the supply of other reading matter to the hospital.

Tuesday afternoon: Home Talent Entertainment.

Home talent programs should include dialogues, pantomime, fancy dancing, debates, etc.

Wednesday morning: Making Christmas gifts and decorations or preparing for the next holiday.

Wednesday afternoon: Arts and Crafts Class.

The arts and crafts class should be taught by some one with the right temperament—a knowledge of technic even is not essential.

Thursday morning: Mending Frolic.

Thursday morning is to be devoted to mending. It is not easy to cast a glamor over darning stockings, unless one has the genius of a "Pollyanna," but something else can be done.

Thursday afternoon: Card Party.

The card party on Thursday afternoon must be made a real social event, not a perfunctory, arranged-by-chance group of hap-hazard guests.

Friday morning: Meeting of the Vanity Club.

The vanity club of Friday morning indicates a time definitely devoted to encouraging the patients to improve their personal appearance. It is appropriate on the morning preceding the weekly dance.

Friday afternoon: The Helping Hand.

"The Helping Hand" is a club devoted to some genuine form of social service.[1]

Saturday morning: A Visit to the Greenhouse.

The greenhouse hour on Saturday morning develops the æsthetic faculties, and may stimulate the formation of a class in botany or for nature study, or there may spring from it a gardening club for the next spring.

Saturday afternoon: Play Program.

The play program on Saturday afternoon offers an

[1] See also Dr. Leigh F. Robinson, Diversional Therapy in Mental Disease. A plan for its employment with special reference to social clubs. *Medical Record*, vol. 90, p. 1028, December 9, 1916.

unlimited field. Variety and surprise should be provided. New plays should be invented or introduced.

Sunday: Various Activities of the Sunshine Society.

Sunday is not usually suitable for group work but is apt to be somewhat lonely and tedious for many patients. The "Sunshine Club" in one hospital supplied individual members to cheer up a lonely newcomer, to read aloud to a blind old lady, to give an English lesson to a foreigner, to write a letter for an illiterate girl, and to meet a wide variety of personal needs of this kind. A committee also saw to the care of flowers, the exchanging of magazines and the forwarding of Sunday papers as fast as read. A few demented patients who cared only for the funny pages were made happy by receiving them regularly and promptly.

It will be noted that this program aims to give variety and yet may be said to be arranged somewhat as the housewife arranges her work into regular duties.

While many simple crafts can be carried on in ward sitting rooms, many others such as metal work, bookbinding, wood work, etc., require so much paraphernalia that they can be more conveniently done in rooms or shops set aside for the purpose. It should be remembered that the trip to the shop may in itself be a pleasant break from ward monotony.

In every kind of hospital it is well to be sure that at least one nurse on a ward has sufficient knowledge of needlework in its various forms to be of assistance, as it will be found that the majority of women patients will take up a variety of this work. Often the example of others will first arouse an interest in this form of occupation, and it has the great advantage of being portable so that it may be done on the ward, in the room, or while sitting out of doors.

INCORPORATED HOSPITALS

Incorporated hospitals as a rule administer trust funds and admit a number of patients at a rate below the aver-

age cost of care. Their work is extended by caring for others at cost or more, any profits earned permitting the reception of a larger number of low-rate patients. The majority of the population consists of persons belonging to what is known as the middle class, who are not accustomed to manual labor. A considerable percentage consists of acute cases such as delirium, stupor, or acute excitement, whom it is impossible to occupy in any way. This percentage is generally larger than that found in state hospitals. It is, therefore, usually impossible to occupy patients with any of the routine housekeeping tasks such as is possible in the state hospitals. Patients can occasionally be persuaded to assist in the care of their rooms, to carry trays, or similar light tasks, but if asked to assist in the kitchen, laundry, garden, or elsewhere, they are very apt to refuse and say that gentlemen or ladies are not accustomed to do such work. While some few patients may not belong in either of these two groups, the example of the majority will lead the few to refuse to do useful work. The superintendent, or his subordinates, makes provision to administer the various housekeeping or other departments without aid from the patients, so that their assistance is not needed. It can be easily understood that social or caste feelings might be outraged if certain patients were asked to assist in any housekeeping work. Occupation is, therefore, usually limited to those occupations which were long ago termed "some form of busy idleness." As many of the patients are men and women who have broken down because of too close application to business, or housekeeping, or care of a family, it is an excellent plan to develop the play-instinct which has been too much suppressed, this frequently being responsible for the breakdown. Outdoor games are undoubtedly the best means of doing this, affording as they do opportunities for play, exercise and fresh air, but every ward should be supplied with cards, picture and other puzzles, and various games.

It is well to have all of the outdoor sports in the charge of a competent nurse or attendant, as such a one being less distracted by other duties can take a more enthusiastic interest in them than can a physician whose medical duties will often interfere at unfortunate times. This attendant should consult with the director and really occupies the position of teacher.

The library will prove a most valuable adjunct and many patients can be induced to take up reading courses in art, history, literature, etc., which have a very beneficial effect.

Whatever manual work is done will be in the form of crafts, and according to the size of the hospital, that is, the number of patients, it will be possible to have few or many of these crafts. It is better to have a few which can be carried to a high point of excellence than to have a great many which are done in a slipshod way because the teachers do not have sufficient skill to properly instruct the patients. But on the other hand there should not be so few that in order to occupy patients they must be driven to the shops as to a task. There should be a reasonable number of crafts from which to select, for without a slight degree of interest on the part of the patient occupation loses its value and becomes difficult to apply. A wood shop and a metal shop afford so many possibilities for variety that it would seem best to first establish these and to install such crafts as bookbinding, weaving and pottery after the former have been found to be inadequate to provide occupation for an increasing number of patients.

PSYCHIATRIC CLINIC

It will require but a moment's thought to realize that in the psychiatric clinic there is much less opportunity for occupation therapy than in any other hospital, due to the acute character of the cases admitted and the short time under care. That is, if we limit our conception of occupation therapy to craft work. If on the other

hand we believe it includes any form of entertainment, we can understand that it may be most helpful in caring for patients, especially if used rather intensively and the nurses are trained to apply it. In the Henry Phipps Psychiatric Clinic of the Johns Hopkins Hospital in Baltimore the average duration of residence of the patients admitted is but twenty-four days. As a small number of the patients spend several months under care it can be realized that a comparatively large number are in the hospital but a very short time. In this clinic intensive care is given in every way, including occupation. This means that the nurses are taught the principles of ergotherapy, that a certain amount of time is given daily to each patient by the occupation director or other teacher in order that he may do his work understandingly, that there is provision for amusements of all sorts, in short, that everything possible is done to divert the patient and keep his mind from his unhappy ideas. It is obvious that with so much individual care required it is impossible to carry on any industries and that they are out of place in a clinic. All occupations should be of such a simple character that not much time is required to learn them. After needlework, basketry and various forms of paper work are obviously the crafts which first suggest themselves. Simple wood work, such as fret sawing, and metal work, such as punched brass, are also suitable.

GENERAL HOSPITAL

I have never heard of an occupation director being permanently attached to a general hospital, yet it is easily seen how greatly such an officer could contribute to the welfare of the patients and I believe that the time is not far distant when one will be on the staff of our larger general hospitals. The primary duty would be to look after the entertainment of the patients, to instruct them in games that they may play, either directly or through the nurses, who must be instructed in this

most important part of their duties. It will possibly be the surgical side which will require the most attention but the milder or convalescent medical cases will also need assistance in passing waiting hours. It would appear possible that the director might give valuable aid to those crippled in some way or other by instructing them how most easily to do things.

The above was written before Miss Susan E. Tracy had organized occupation in the Michael Reese Hospital in Chicago during the Spring of 1916. She has detailed this experience in the *Maryland Psychiatric Quarterly*, Vol. vi, p. 54, January, 1917. It should also be remembered that Miss Tracy gave a course in invalid occupation to the nurses of the Massachusetts General Hospital in the Spring of 1911. Other general hospitals have since given occupation courses, but I have yet to learn that any general hospital has appointed a director who is permanently in charge of such work. (In February, 1918, the Presbyterian Hospital of Chicago was taking steps to appoint one.)

CHAPTER V

HELPS

In order that occupation may be of value to patients it is essential that a certain amount of variety and change be made from time to time. To a degree this is attained by the short working periods with the change from one form of occupation to another, but change and variety are necessary in the same occupation and the director and teachers must be constantly on the alert for new ideas, patterns, etc. These may be obtained from many different sources, undoubtedly the most prolific being the various periodicals which specialize or have special departments in needlework and other crafts.

There are quite a number of periodicals which I have found inspiring and it may not be amiss if some mention is made of them.

Probably the most helpful has been the *Industrial-Arts Magazine*, published in Milwaukee by the Bruce Publishing Company, the subscription to which is $1.50 per year. It is conducted especially for manual training teachers, treats a diversity of subjects, and the manner of their presentation makes their adaptation for the instruction of patients quite easy.

The School Arts Magazine, published in Boston by the Davis Publishing Co., at a cost of $2.00 a year, as its title indicates, is somewhat more special in its scope and is intended to promote drawing and painting in their simpler forms. The teacher will find much that is of help in inculcating a knowledge of form and color, both of which are necessary in so many crafts and which have a refining influence on all who acquire even a slight knowledge of these subjects.

Something To Do, published in Boston by the Bennett Publishing Co. at $1.00, is more elementary in character but of more general interest. As a rule the ideas which may be gained from it are of especial value for occupying demented or low-grade patients, but it is worth having.

The Craftsman, formerly published in New York by the Craftsman Company, and succeeded by *The Touchstone,* subscription $3.00 per year, is of value more for the ideas it suggests than for any directions which it may give. Occasionally, however, specific articles appear, and it has a strong influence in promoting a knowledge of good taste.

The Art World is a most interesting monthly with a department devoted to Arts, Crafts and the Home which usually contains one or more articles of practical interest. It is published in New York at $4.00 per year.

Arts and Decoration, published in New York by Adam Budge, subscription $3.00 per year, is on a still higher plane than the above. It is seldom that one gains a positive suggestion yet the perusal of any number is inspiring and one rises from it with the determination to make the products of the shops more like those of the older craftsmen so that they will have an artistic as well as a practical value. (Since combined with the *Art World.*)

The above periodicals are those which in our experience have proved of value, but there are doubtless others which would be of service to those with different tastes, for example, a little English weekly called *Hobbies* which is devoted especially to the interests of fret sawyers, while not neglecting other subjects. Among our patients none was found who was interested in the rather elaborate designs furnished. Especially in the womanly crafts of needlework, knitting and crocheting, such journals as *The Modern Priscilla, Woman's Home Companion, Ladies' Home Journal, McCall's Magazine, Delineator,* etc., are of inestimable value, but are too well known to need more than mention here.

The Playground, published in New York by the Play-

ground and Recreation Association of America at a subscription of $2.00, is very helpful in suggesting new forms of amusements and stimulating the director to keep active the too often neglected play function.

Even advertisements may suggest the making of the same or somewhat similar articles, but ideas will not be derived from books or periodicals alone. Shop windows, museums, the homes of our friends, will frequently suggest ideas to be carried out in the various handicraft classes. Frequently while going through the wards an idea for the making of a new article, or for the improvement of an already existing one will occur to the director or teacher.

When new ideas come it is necessary that some note be made of them lest they be forgotten, and in a short time these notes will accumulate to formidable proportions, so that some system of classifying is necessary in order to make reference to them convenient.

Probably the best method is to have a number of folders such as are used for filing letters, consisting of pieces of heavy paper folded in half, on which are written the various subjects upon which notes are kept, such as Basketry, Metal Work, Paper Work, Aprons, etc., and in these are placed the clippings and notes that have been accumulated relative to these subjects. This permits the removal of single clippings, sketches, etc., which may be given to individual workers for their guidance. For this reason alone this plan is superior to that of keeping clippings and notes in scrap books, and is less bulky. An ideal way would be to give each note or clipping a number and have index cards. This allows cross reference and permits the easy finding of a particular note which may have to be filed out of place because it is on the back of another. This plan, however, entails considerable labor in the filing and the other works out quite satisfactorily.

Besides the notes and clippings which must be kept for reference, there should be a small library or collection

of books on the various crafts. These should be in some place where they will be convenient to all of the teachers, rather than in the different shops of the institution, for it is quite conceivable that a wood worker may wish to combine a certain article with reed or metal, and by referring to a book on one of these subjects and working out the problem for himself he will broaden his conception of the subject much more than if he receives specific directions.

For a number of years the *Maryland Psychiatric Quarterly*, of which I have the honor to be one of the editors, has conducted a department of Occupations and Amusements which is under my direct supervision. In this and in the body of the magazine have appeared a number of interesting and suggestive articles, as may be seen by consulting the Bibliography of Occupation Therapy and the references in this book. The *Quarterly* has been made the official organ for the National Society for the Promotion of Occupational Therapy and as such will contain more information which will be of value to occupation teachers.

This society is quite young, having been incorporated March 17, 1917. Its object is to bring together all interested in the subject and to increase knowledge by giving opportunity for the exchange of views. Practically anyone interested in occupational therapy may become a member. The secretary is Mr. Louis J. Haas, Bloomingdale Hospital, White Plains, N. Y.

A further help is a record blank which should be kept for each patient treated in this manner. The ideal blank has not yet been devised and probably never will be, for every one has some difference of opinion on the subject. The following has proved very satisfactory in my service, but Dr. Jones in a nearby hospital prefers to have the same sort of information collected on a form having questions. This impresses me as not so good for a running record though satisfactory to obtain information at a particular time, and so it goes.

SHEPPARD AND ENOCH PRATT HOSPITAL HANDICRAFT RECORD OF

In order that the physician may have knowledge of the progress made by patients in the various handicraft classes it is necessary that the teacher keep a record of their progress, keeping account of the various forms of work carried on and also noting the following:

Attention.—Whether the patient shows an *interest* in the work and gives little attention to anything else, *concentrating* well. Or whether he is inattentive and easily distracted from his task. Whether he soon shows fatigue symptoms, such as restlessness, sighing, etc.

Ability.—Whether the patient seems to understand what is expected of him and does his work well. Whether he shows *initiative* by overcoming unexpected difficulties or accidents without immediately calling upon the instructor for help. Or whether he constantly complains that the work is too difficult, etc. It should also be noted if there is any periodical variation in doing the work. If he is neat or careless, works rapidly or slowly, and any other points which may be thought interesting.

There are so many books which may prove of value that it is impossible to list them all, but those named at the last of this book have been found very helpful to the workers in our hospital and I therefore give them in order to suggest to the new director a nucleus for his occupation library.

As everybody knows who is familiar with the books on any craft, it is usually impossible to say that any one book is the best on that subject. Each contains good ideas, and while a special one may appeal to us for several reasons, we find that helpful ideas may also be gained from others.

CHAPTER VI

FINANCIAL

Economy in administering occupation is usually a stern necessity in hospitals but even though the appropriation for this purpose be a large one, there are many reasons why one should be careful of expenses, and perhaps the first is the effect on the nurse. It is an unfortunate fact that owing to the freedom with which supplies are issued in institutions and the lack of knowledge of their cost, employees frequently show a carelessness in the use of articles which might be avoided were they better informed. It is well, therefore, in the occupation course to instruct the pupils as to the cost of tools and materials. The material for a reed or raffia basket may cost but 15 or 20 cents, yet when given out to a number of patients the total amount may be considerable. It is important, therefore, that those in charge of materials learn their value.

The same applies to the patient, who should not be taught extravagant habits.

The utilization of waste is also important for the reason that the waste of one department of the hospital may supply a necessity for another. For example, the discarded bed linen, dresses, etc., from the linen room will supply rags for weaving rugs to be used in the ward, and the burlap wrappings of supplies can be used for the same purpose. The wood or whittling shop can usually obtain sufficient material for a part of its activities from the crates and boxes discarded by the store keeper.

An important question in the economical administration of the occupation department is the proper disposal of the articles made by the patients, which they do not

desire to keep. In most hospitals patients are permitted to keep an article which they have made provided they pay for the cost of the material used. This is a fair rule which has worked out very satisfactorily.

Many hospitals have a case near the administration entrance in which are shown articles for sale, but it is doubtful if the revenue derived in this manner amounts to more than a trifle, and the advertisement of the fact that excellent articles are made by patients and that this form of therapy is used is probably of much greater value.

Many hospitals also hold bazaars or fairs annually or semi-annually which are usually successful, and this is probably the best method of disposition of the products of the occupation classes. Many persons will attend these occasions with a charitable inclination and, if the fairs are held before the Christmas season, others find an abundance of the articles which they desire to bestow on their friends, which may be purchased at moderate prices.

This question of price is a perplexing one. As a rule things made by patients are not so well done as those purchased in the open market, hence they should sell at a lower price. Labor not being a cost factor it is possible to sell the article at a considerable reduction from the market price and yet make a profit. If a well-finished article be made and sold at a low price in competition with the same sold in the open market there is danger of arousing the antagonism of the trade unions, who have been known to invoke legislative action to stop hospitals from offering any manufactured article for sale. It is, therefore, a good rule to make only enough of articles that are made by trades, for example brushes, shoes, etc., which can be used in the hospital or others allied to it, and to specialize in the articles offered for sale. This can easily be done as there is, especially at present, a demand for hand-made articles in the various crafts. Some hospitals have a very small appropriation for oc-

cupation, or perhaps none, and all the expenses of this department must be paid from its earnings, with sometimes the additional expense of amusement added. While this increases the difficulty of the problem it has been found possible in a number of such instances to adequately meet the demands. It is naturally a source of gratification to all that the work of the occupation classes in at least one institution is self supporting and also provides entertainment for the entire hospital.

Besides making articles to be sold at the annual bazaars and those which are used, it is a good plan to do as much repair work as possible. In the first place the patient learns how to repair articles in every-day use and if he returns to extra-mural life he is able to diminish his own or his employer's living expenses. Secondly, the principle of conservation is learned by. all. Third, there is a diminution of the hospital expenses. Fourth, by this means it is possible to keep the hospital equipment in good condition, and, fifth, an unanswerable argument is made against any skepticism as to the value of the shop. Any one of the above would appear to be a sufficient reason why repair work should be carried on, but others are not difficult to give.

It is well to keep some account of all repair work done and all articles supplied for hospital use, in order that proper financial credit may be given.

During November, 1916, the Maryland State Hospitals held a State Hospitals Exhibit and Sale which was so successful that plans were made to open a permanent salesroom. It was claimed that this was the first sale of this kind ever held. Some such arrangement might be made by other state hospital systems, or a certain shop in a town might be induced to handle the products of the shops of a nearby hospital. Allowance of about 25 per cent. for selling cost must be made in pricing articles which are to be sold in this way.

The following was written by Reil in 1803 and should be kept in mind as a guiding principle. "The narrow-

hearted financier must not follow us into the mad-house to look with wet eyes at every tuft of wool which the insane man spoils, or even perhaps measure the increased revenue from the institution with its progress. Insane asylums are not intended for monetary profit."

CHAPTER VII

TRAINING COURSES

As has been said, it is necessary that there be hearty co-operation between the director and the superintendent of nurses in order that the nurses receive proper instruction in occupation. Within a very few years only has this important subject occupied a place in the curriculum of both mental and general hospitals, and it cannot as yet be said to have been accorded the recognition it deserves. Personally I believe that the essential elements of occupation should be taught to the probationer in order that she may early in her work look upon her patients as people with an illness rather than as "cases" of various sorts. This would give her an early opportunity to acquire what Dr. Stedman[1] has so happily termed the "art of companionship." In the past, so far as the general nurse is concerned, this has been left to her own initiative to develop and occasionally she has drifted into the bad habit of discussing with her patient details of her previous professional experience which may easily have a bad effect. This is due, I believe, to failure to recognize the fact that when a nurse leaves the full, busy life of a ward for that of special or private duty, she will have during her patient's convalescence much time which she has not been taught to occupy either to her own or the patient's advantage.

For several years there has been a growing tendency to give the sick intensive care, with the consequent employment of a greater number of nurses. This has re-

[1] **Stedman, Henry R.** The Art of Companionship in Mental ... *Boston Medical and Surgical Journal*, Vol. clxx, p. 673, 1914.

sulted in the use of many more special nurses. As a consequence the need of companionable women is much greater than formerly, and it would seem only fair to our pupil nurses that they be given some slight instruction in the art of companionship.

One great handicap is the necessity of teaching the nurse so much in a comparatively short time, but four hours is not too much for instruction in the elements of invalid occupation to the probationer, reserving the major part of this important subject until later in the training period.

Because registration in most states is impossible for the graduate nurses without a general training the majority of training schools in mental hospitals take up a good deal of time in teaching the pupil nurse general studies not necessary in her mental work, the practical part of her general training being obtained after her mental course in some affiliated general hospital. It is obvious that with such an arrangement the mental hospital does not get as full service nor give as full instruction in its own specialty were the nurses' time not taken up with studies which are not directly required for mental nursing. Practically all nurses who have received mental training before their general are of the opinion that the tact and ability to handle people which they have learned in the mental hospital are of great service in their general work. This opinion has received a strong endorsement from Dr. G. Alder Blumer, Superintendent of Butler Hospital, who in his annual report of the work of the hospital in 1915 says: "It is apparent that the feeling grows apace among candidates for the profession that there is a distinct advantage in getting one's first lessons in a mental hospital. For here is learned, better, I believe, than in any other kind of special institution, the necessity for patience and self-control; and the person thus tested in the school of experience acquires in moral resistance a stock of ethical qualities that materialize themselves as character, to

say nothing of capitalizing themselves as assets whenever and wherever their fortunate possessors proffer themselves as graduates in the broad field of service."

On the other hand, Professor M. Adelaide Nutting, Director of the Department of Nursing and Health of Columbia University, says: "This important branch of special nursing should not be left out of consideration to be handled entirely independently of the general scheme of education for nurses. For such special training should at all times rest upon a basis of general training. It should be placed at a stage in the education of the nurse when she is well grounded in her preliminary sciences, and has sufficient command of nursing principles and methods to be able to apply them under new and peculiar conditions. For it must constantly be kept in mind that many mental troubles are based upon physical disorders, not infrequently of a grave nature; that many mental troubles are constantly accompanied by bodily ailments and weaknesses. Every resource which the student-nurse has learned to apply in her medical and surgical nursing may be called into requisition here. The student, therefore, should have had a considerable training in general nursing before proceeding to this special branch, more difficult, more complex, baffling often even the most intelligent efforts and study and making in all instances a new and special demand upon faculties trained to comprehend in some degree the nature of these demands."

Theoretically I agree with Miss Nutting that the general training should by all means precede the special or mental training, but practically it has been found that nurses who have had general training before their mental are prone to be so engrossed with the observation of objective symptoms that they become oblivious to the subjective. In summing up the matter it may be said that we will have good nurses and poor nurses no matter what training is given, and a good mental nurse will not necessarily be a good general nurse even though she has

the best training, and *vice versa*. A short course in occupation has seemed to me to be an excellent method of teaching certain psychological facts in a way that will make them most obvious to the pupil, and enable her to make practical application of the knowledge of psychology which she will acquire later.

To the training school the director will occupy the position of instructor just as do the physicians who teach any other branch of nursing.

The character of the course which he gives will vary according to the class of patients treated and to the time allowed for it so that it is impossible to state of what it should consist. A rather simple one which has been given under my direction at the Sheppard and Enoch Pratt Hospital for several years is as follows:

The course comprises at least twelve lessons, but is not considered complete until all the pupils have done the required work.

I. Games.—Pupils are required to learn Cribbage, Euchre, Whist or Bridge, and Fan-Tan; three forms of Solitaire, Baker's Dozen, Canfield or Klondyke, and Rainbow; also Dominoes, Sniff and Checkers.

They are also given a talk upon the use of various forms of puzzles and are given a number of simple puzzles in order to start a collection.

II. String Work.—After learning to serve, to braid four or more flat, and four round, and to tie square, crown, and wall knots, the nurses are taught the application of these in making fobs, guards or other articles.

They also learn to make a string doll or a duster—these being modifications of a tassel—and to make a doll's hammock or a bag upon a pasteboard base—this being an introduction to weaving.

III. (*a*) Paper Folding.—The required forms are an envelope, a cup, a fish's mouth, a frame, and a box.

(*b*) Paper Cutting.—A star, a string of dolls are the first steps, being a combination with folding. Cut-out pictures, usually of simple form, are also made.

Besides the above certain other forms are suggested and shown but are not required.

IV. Binding.—Simple pamphlet stitching is taught and also a combination of a number of folded sheets to form a scrap-book.

V. Crepe-paper Work.—Usually some simple objects are made in order to teach the possibilities of crepe-paper and crepe-paper rope.

VI. Reed Basketry.—Each nurse makes a basket and is taught various combinations of weaving the same.

VII. Embroidery and needlework are discussed in a talk and the value of the various forms in different psychoses is brought out by examples shown.

VIII. Leather Work.—A demonstration of the technic of carving and hammering leather is given.

IX. Wood Work.—This consists of a demonstration of simple wood carving, and of practical work in the shop in making simple objects such as paper knives, canes, trays, bird-houses, wind toys, stools, etc.

X. Metal Work.—This consists of practical work in Venetian iron work, hammering copper, making copper ornaments, initials, paper cutters, etc.

Each nurse is encouraged to develop a particular branch of the work and to become especially proficient in it.[1]

[1] The above course is frequently amplified in minor particulars such as practical work being required instead of a demonstration being given.

There is usually an introductory talk by the director during which the principles of work cure are emphasized, interesting facts in the history of its development are mentioned and the importance of its use illustrated by reference to specific cases who are being aided.

It will be noted that in the above courses the idea is to teach the nurse some of the possibilities of the materials which she may have at hand, so that she will never be at a loss for something to do.

Those who are familiar with Miss Tracy's[1] excellent book will recall that by its arrangement the nurse is taught to consider the capabilities of her patient, chapters being written for the impatient boy, grandmother, the business man, etc.

In comparing these standpoints it must be remembered that in the course outlined above we are considering but one class of patients, the mentally sick, and the nurse may very easily learn to make further applications of what she has learned for herself when necessary. While the statement may at first seem paradoxical, the mentally sick in their capabilities for occupation approach more nearly the normal than those physically defective, such as the blind or crippled.

It has been found that the nurse who has been conscientious in her work in the above course has acquired rudiments which may be quite easily developed by herself and it is believed that some such course is sufficient training in what may be called manual occupations. But there is another very important side to the nurse's training in occupation. In the private and incorporated hospitals the majority of the patients belong to what is known as a cultivated class, that is, they are men and women who have had time to gain a knowledge of the literature of their own language and perhaps of others, and have learned to know something about good music, art, etc. It must be at once admitted that

[1] Tracy, Susan E. Studies in Invalid Occupation. Boston, 1910, Whitcomb & Barrows.

the majority of our pupil nurses are not intellectually on the same plane as their patients, because they have lacked the time and opportunities, perhaps, to read, travel, or study to the extent their patients have enjoyed. At the same time the nurse must be a companion to her patient and this is not possible unless she has broadened her mental horizon by study of literature, art, and music. In order that this may be accomplished in the shortest possible time it is necessary to give some of the so-called culture courses similar to those given at the McLean Hospital and outlined by Miss Edith Kathleen Jones,[1] the librarian, who gives them. They are given in the form of lectures with a certain amount of required reading, and the course on art is well illustrated. Naturally in these courses it is impossible to do more than give the most important points. A literature primer, such as Stopford Brooke's, may be taken as an outline for a course in English literature, and "Apollo" for a course in art, but even these if followed closely will give courses which are too long and may have to be abridged. Miss Jones has given a strong impetus to these culture courses by publishing an outline of a course of lectures on Books and Reading.[2]

A trained librarian is naturally the person to give these but in the absence of one it may be possible to get one of the assistant physicians to give up an evening a week to this work.

A player piano or some other form of mechanical musician can be utilized to educate both nurses and patients as to what is good music, and the free use of even such cheap pictures as the Perry Prints will aid in cultivating a knowledge of the most famous paintings. Associated facts should be given with these.

The nurse should be taught dancing and any other

[1] Jones, Edith Kathleen. Culture Course in Training Schools for Nurses. *The Modern Hospital*, Vol. iii, p. 205, September, 1914.

[2] *American Journal of Insanity*, lxxii, p. 299, October, 1915.

form of physical exercise in which it is necessary for her to participate. Participation, be it remembered, is a strong factor in making occupation effective.

Especially in private and incorporated hospitals should the nurse's training be developed toward making her a good companion. We do not ordinarily require that our friends should possess a knowledge of anatomy and bacteriology, but we do require that they should have a knowledge of some of the same books, music, pictures, etc., that we ourselves have. Hence it would seem but logical that for mental nurses, at least, there be some modification in the early course of study. Probably the day is not far off when there will be more intensive training of the nurse in the specialties and a shortening of her course in general work.

The nurse's occupational training is facilitated by the use of an accomplishment card which may be arranged as follows:

Name Class { Post Graduate / Junior / Senior / Probationer / Attendant

Basketry, Reed
Raffia
Embroider
Crochet
Knit
Net
Tat
Fagot
Featherstitch
Quilt
Sew, Hand
Machine
Stencil
Metal Work
Leather Work
Wood Work
Draw, Design or Paint

Play What Musical
Instrument
Sing
What Voice
Read Well
Or Recite
Taken Part in
Theatricals
Play Tennis
Croquet
Basket Ball
Golf
Or Other
Outdoor Game
Calisthenics
Dance
Swim
Bowling

or in any other convenient form. Comment on their value seems superfluous, but Miss Cameron has said:[1]

"Most Industrial Workers, whether they belong to the nursing staff or not, will agree with me when I say that co-operation on the part of the nurse is most important in the occupational department of each hospital, as occupation has proved to be a most powerful therapeutic agent in the treatment and cure of nervous and mental diseases. We, who are superintendents, are very careful to find out certain qualifications the prospective pupil possesses before we admit her as a part of the training school, but the occupational qualifications we have in the past overlooked. Providing the probationer is the right age, is of proper height, and has the required educational and moral qualifications, the average superintendent does not inquire whether the prospective pupil can knit, sew, do basketry, sing, dance or play cards.

"The time is here when we should consider the occupational qualifications of the nurse as well as the others,

[1] Cameron, Reba G. The Value of the Accomplishment Card (Editorial). *Maryland Psychiatric Quarterly*, Vol. iv, p. 55, January, 1915.

and by so doing aid the occupational teachers in their work, and increase the efficiency of the nursing staff, for nowadays a nurse who is versed in occupational work is, without a doubt, of more value than one who knows absolutely nothing of industries.

"In order to find out what lines of work the nurse may already possess, an accomplishment card might be given to each nurse on admission with instructions to fill in and hand to the Superintendent of Nurses before a stated time. The card, as outlined, is excellent, and when these are handed in the Physicians, the Superintendent of Nurses, and the Industrial Workers will know at a glance that Miss Jones can knit and do plain sewing; Miss Brown plays the piano, and Miss Smith understands raffia work.

"Now, of what advantage is this knowledge to us when we have found it out? Let me illustrate, using the present war as an example. A number of hospitals are doing relief work, and the question comes up, 'Who understands knitting?' Instead of asking each one individually whether or not she can knit, we consult our information cards to find out that Misses Jones, Brown and Smith know how to knit, so these nurses can be assigned classes in this old-fashioned but useful art which has revived considerably since the present war broke out.

"Again, the industrial teacher may arrange some little entertainment for an evening's enjoyment, and by consulting the cards can find who can recite, sing and do fancy dances, and all needless questioning is avoided.

"One more illustration to show the advantage of the accomplishment card to individual patients. Mr. Jones, an artist, is admitted in a much depressed condition. It is very difficult to interest this patient in the industrial pursuits on his ward. Caning chairs, basketry, or weaving does not appeal to him, and the industrial instructors in a large institution cannot spend very much time with individual patients, so we consult our cards and we find that Miss A., knows something of drawing and paint-

ing, thus Miss A's services are brought into play. She is placed on this ward as nurse and given instructions to interest herself in this patient. Before long we find Mr. Jones helping Miss A., illuminating Christmas cards and calendars. Interest takes the place of apathy and his fancied grievances are on a fair way to be forgotten.

"I would add in closing that this card system, as outlined, is well worth trying and superintendents who introduce it in the Training School will do so to their own advantage as well as to the advantage of the patients and to the occupational department of the Hospital."

The course which has been outlined is an extremely simple one and represents the minimum probably, of what should be given. Experience will perhaps do more to assist the director in formulating one suitable for local conditions than will a number of outlines. The primary object of all courses should be to develop the initiative of the nurse so that she can make the best possible use of her knowledge.

During 1917 I wrote a paper,[1] introducing several other papers upon the training of occupational teachers and directors, and in this gave outlines of several different courses. While these are perhaps too full for use in the training school they are suggestive. Reference may also be made to the following:

Reba G. Cameron. The Training of Occupation Teachers. *Maryland Psychiatric Quarterly*, Vol. vii, p. 33, October, 1917; Evelyn L. Collins. Suggested Course in Occupation Therapy. *Ibid.*, p. 36; Isabelle Roorbach, Course in Invalid Occupation. *Ibid.*, p. 39; see also those given in the Chapter on Occupational Therapy and the War.

[1] The Training of Occupational Teachers and Directors. *Maryland Psychiatric Quarterly*, Vol. vii, p. 8, July, 1917.

CHAPTER VIII

AMUSEMENTS

At the present time there is no hospital which to my knowledge utilizes amusements to the extent that is possible for the benefit of the patients. With but slightly more effort the various forms can be made to do more than merely divert for the time that they are in progress. Practically all forms of amusement if properly used can be made to serve as means of re-education. The simple forms of amusement which are found upon the wards and which are usually used for the diversion of single patients, such as picture puzzles and games of solitaire can be well used to train attention. They may also be used for muscle training. The nurse may be obliged to assist in these in order to stimulate the patient and get him started, but usually this is only necessary for a short period, and if tactfully done the patient may be encouraged to do a great deal without assistance. So too, when convalescent the patient may take part in double or four-handed games where a greater amount of concentration is necessary and where a tendency to irritability must be inhibited.

Reading, primarily taken up for diversion, may become a means of culture and self-education. We all know the satisfaction which follows the reading of a book which serves to increase our knowledge and there is a great deal of fiction which gives historical, or other facts, in a sugar-coated form. For example, Mark Twain's The Prince and the Pauper, or Charles Major's When Knighthood was in Flower may serve as a stimulus for collateral reading to determine the historical accuracy of these works. Much can be accomplished by the collation

of related facts and patients can be stimulated and shown how to gather these facts for themselves.[1] I know of one young woman who was started upon a study of moths by reading Gene Stratton Porter's books.

With the congregate amusements where large groups of patients are to be entertained it is sometimes difficult to do much more than divert, but let us consider a few of these in detail.

MOVING PICTURES

Moving pictures are very popular as an amusement at the present time, their convenience and comparative cheapness being to quite a degree responsible. Unfortunately the film makers have not as yet learned "what the public wants" and as a consequence are making reels which are melodramatic, filled with unhealthy sentiment, or even shocking. In mental hospitals we count ourselves fortunate if the movie evening passes without having suggested suicide, or death in some other form, something unpleasant or worse. If anyone doubts that moving pictures stir up the emotions let him go to any movie parlor and observe how many persons wipe their eyes during the passage of certain films. If he thinks this is due to the bright light let him observe if the same effect results during the passage of a humorous film. Selecting reels is difficult for anyone not connected with a film exchange and it is best to enlist the co-operation of the man from whom they are rented and explain to him the character of reels desired. The very humorous, even farcical subjects, are of value in that they frequently force a laugh and self-forgetfulness by their absurdity. So-called educational films, such as scenes of foreign countries, are not especially diverting unless there is some accompanying description or unless comment is made by a lecturer. Patients are always interested in scenes of activity such as films

[1] Geo. Edward Barton. Inoculation of the Bacillus of Work. *Modern Hospital*, Vol. viii, p. 399, June, 1917.

which begin with the harvesting of wheat and end with the delivery of a loaf of bread, or scenes in some large manufacturing plant, or at a shipbuilding yard. There are plenty of films in which a good story is told and frequently historical events are dressed up with some romance which adds rather than detracts from them. The groups which have been named above all have value in stimulating the interest of patients in affairs outside of themselves. Some believe that films which tell their story in one reel are best and those requiring more than five should be tabooed, but experiment should prove or disprove this.

A song or short instrumental piece between reels adds considerably to the pleasure of the entertainment. At one that I attended held near the anniversary of the death of Stephen G. Foster one of the assistant physicians read a brief sketch of Foster's life and in subsequent intermissions sang some of his songs. This sort of thing might easily be developed, but without too much emphasis being laid on the death of the subject.

DRAMATICS

Probably no form of entertainment is more enjoyed by hospital patients than the "home grown" play in which the patient sees some favorite nurse perform in a costume or with properties that the patient has perhaps helped to make. These may consist of some standard play like Box and Cox or the more simply gotten up vaudeville. It is an excellent plan to organize a stock company to take charge of this work and give a number of entertainments during the winter, different groups giving different plays. It is necessary for the director to have an assistant to serve as stage manager, who will take charge of a great deal of the detail in connection with entertainments. A nurse or attendant whose regular work can be dropped for short periods and who has a liking for dramatics will probably prove the best assistant. This stage manager can look after the

properties and costumes which necessarily accumulate in a hospital, and keep them from being lost or destroyed, and also aid in prompting, dressing, etc., at a performance. Such an assistant is necessary even though the director himself gives up a good deal of time to getting up the play.

It is questionable whether patients should be allowed to take part in these entertainments. I believe that learning and rehearsing a play is ordinarily too much of a tax upon convalescents but that they frequently can be allowed to do a "stunt" at a vaudeville. In this way there need be no interference with the performance if the patient feels unequal to "going on," and as he is not an essential part in it he is not so apt to become nervous and apprehensive.

There is no question, however, that the preparation of a play can be so managed as to be helpful in developing an *esprit de corps* and of loyalty to the hospital among the participants. This is especially the case when groups of nurses and other employees are brought together for this purpose. Elsewhere[1] I have told how the exchange of home shows between different hospitals has worked satisfactorily.

ORCHESTRA

The same spirit of loyalty may be developed by the organization of an orchestra which can play at dances, give concerts, and otherwise add to the enjoyment of all. It is usually impossible to form an orchestra except in the larger hospitals and a competent leader is always necessary. Here it is possible to cultivate a taste for better music and often a few remarks upon the composer and his work which is to be played will secure a more attentive hearing.

LECTURES

Lectures formerly were overdone and consisted of some one reading from a guide book while lantern slides were

[1] *Maryland Psychiatric Quarterly*, Vol. ii, p. 35, October, 1912.

shown. Naturally this was a perfunctory and uninteresting performance and probably as a result of this but few lectures are now given to audiences in mental hospitals. This is to be regretted for a certain number in the audience will always take an especial interest in the subject presented and will therefore be benefited. It is often possible to find a person who has delivered an interesting talk before some club or church who is willing to repeat it for the benefit of the patients. As these are frequently accounts of personal experiences they are so much the more interesting.

Smaller groups of patients will be interested in the lectures on art or literature which are given to the nurses as culture courses and it is possible to allow them to share in such a course.

The various members of the staff should be encouraged to talk of their different hobbies, as they can all be made interesting.

OUTDOOR GAMES

Baseball probably takes the lead as there are very few boys and even girls born in the United States who have not at one time played it. Those debarred from active participation in the game should be encouraged to become rooters and so exercise their lungs. When bad weather prevents out-of-door playing, it is possible to have enjoyable and amusing games in a gymnasium or other large room by playing indoor baseball or some home-made substitute for it. Besides games with outside teams, who must necessarily be well behaved, it is well to encourage a rivalry, where the population permits, between teams from different wards or buildings or special teams made up for the purpose and having some fanciful name.

The enjoyment of all may be increased by some explanation of the game and the various plays and names. It is well to take small groups of patients, especially of the women, and give little explanatory talks, illustrated on a blackboard or chart, so that those unfamiliar with

the game can understand what it is all about and eventually distinguish between a hit, error, assist, out, Texas Leaguer, etc. All spectators should be encouraged to keep score on cards which may be prepared in the printing shop.

Cricket is also a good game but for many reasons can never be as popular as baseball. In the first place it lacks the variety and action of the latter, and secondly, requires too long to complete a game. Thirdly, too few spectators are familiar with it, therefore explanatory talks are even more necessary than for baseball. As exercise for the participants it has the advantage over baseball, however, in being less strenuous.

Tennis, golf, and croquet are all excellent and facilities for playing should be provided. In order to keep up interest the element of competition should be introduced by holding fairly frequent tournaments. These should be so arranged that those players who are most equally matched in skill shall compete against each other.

BASKET BALL

Basket ball is usually played indoors during winter months, but can also be played outdoors and its action makes it an interesting game to watch. When played by girls or women certain changes are made in the rules so as to eliminate the probability of roughness. It is well to organize a number of teams if possible so that there may be the stimulus of competition.

VOLLEY BALL GAMES

Quite a number of games can be played with a volley ball, such as volley ball itself, which is a modified form of badminton, monkey ball, playground ball, etc. These volley ball games are much better than baseball for those who are "soft" and whose muscles are not hardened to the degree that is necessary for so active and prolonged a game as baseball. These games may also be played indoors or out.

FIELD AND TRACK ATHLETICS

An athletic meet is always enjoyed by those who are spectators as well as those who compete. Some hospitals make the Fourth of July Games an annual event but it is probably better to hold them in the Spring or Fall when the weather is less trying to the entrants. The training or practice period for these events is of value.

Besides the forms of amusements which have been mentioned, there are many others which will suggest themselves, such as picnics, bowling, card parties, candy pulls, etc.

It is often possible to have parties on the wards on rainy days, or to celebrate a birthday or some other event which will be greatly enjoyed by the patients because of the impromptu character, and especially if they are allowed to share in the necessary preparation. Nurses should be encouraged to have these parties as they create an excellent spirit of friendliness and confidence.

Their cost need be but trifling and this is far outweighed by the good accomplished. I have often seen a patient become more co-operative and let down his reserve because he became appreciative of the friendly spirit which actuated a party. While an impromptu affair is often much enjoyed, it is well to announce such events when possible in order that the pleasure of anticipation may be enjoyed.

Interest in all entertainments such as shows, lectures, games, etc., should be stimulated by the use of posters announcing them. If the hospital is small and has no printing shop these can be lettered by hand, opportunity being afforded for any ornamentation which will catch the eye. It has been found when posters are used that much more interest is taken in the performances. Programs, dance cards, or score cards add much to the enjoyment of a certain number and undoubtedly aid in concentrating their attention. Menus and decorations will make more of a holiday dinner than will extra diet, so that a small printing shop is one of the most valuable

adjuncts of the occupation work and every hospital of fifty or more patients should have one.

Perhaps it may be of interest and also somewhat suggestive if I describe in detail some of the menus which have been used on festive occasions at the Sheppard and Enoch Pratt Hospital. The first menu consisted of two cards on the first of which was printed a green wreath formed of what are known to the printer as florets (a little flower) arranged in an oval form to represent a wreath of holly surrounding the words "Merry Christmas" in red. On the second card the menu was printed, also in green and red. The two cards were tied together with red ribbon. Since this first effort we have become more ambitious, now make our own rucco blocks for special designs, and then touch up the printed picture with water color or dye, by this means making occupation for a certain group of patients. We have gradually accumulated a number of cuts purchased from the type founder and these can be arranged in many attractive combinations.

We have also learned that for certain holidays, certain color combinations are appropriate, such as yellow and green for Thanksgiving, orange and black for Hallowe'en, purple for Easter, though the last is sometimes varied with pale green and yellow to express the idea of spring, as shown by the jonquil. Patriotic days naturally require the use of red, white, and blue, while St. Patrick's Day must have green in prominence.

While the use of color has aroused interest we have been able to stimulate our patients still more by the use of verses, sayings, etc., appropriate to the anniversary, which are printed on the menu. In the first place various members of the staff began to collect them, then patients began to hand them in, so that now we have accumulated a fair-sized store for certain occasions, but for others must still keep hunting. These inscriptions vary from the sublime to the ridiculous and include the historical. We regard these holiday menus as of great value as stimu-

lants to a wider interest, and their preparation frequently gives the occupation class several hours work.

In preparing these menus and especially in finding inscriptions for them we have been aided by Chambers's Book of Days, Bartlett's Familiar Quotations, and Carey and Jones's Books and My Food, but must acknowledge our indebtedness to many other sources, including advertisements.

CHAPTER IX

WORKSHOPS

It is to be regretted that too frequently when provision is made for shops and workrooms, several very important things are not considered. In the first place, shops should have plenty of light, not only to permit the workers to see their work properly and so diminish eye strain, but to give a cheerful appearance to the room. Undoubtedly one feels more like working in a bright cheerful room than in a dull one. For the same reason the place should be made as attractive as possible. The physician who was showing me about the splendid Men's Pavilion at Bloomingdale remarked to me: "A place like this makes one want to work, doesn't it?" So it did, though there was no occupation going on at the time.

Too often do we find shops placed in the basement or in some old building whose original purpose has been abandoned. It is better to have a poorly adapted shop than none at all, and while very few of our hospital managers or trustees realize how important occupation therapy is and therefore do not make sufficiently large appropriations to provide the ideal place, it is wise to make our shops as attractive as possible even though this be difficult.

If an artificial lighting system is necessary, and it usually is on dull days or late winter afternoons, the indirect system is undoubtedly the best both hygienically and æsthetically.

Like many others, I believe that an important function of our hospitals is to teach our patients *how* to live. Doubtless many have heard of the Utica State Hospital patient who thirty years ago refused to return to her home when she had recovered until her husband had

installed a bath tub. Undoubtedly, indirect lighting is the most hygienic form and those who have had the opportunity of using it know that it is the most pleasant.

FIG. 1.—Exterior of men's occupation pavilion, Bloomingdale Hospital, White Plains, N. Y. *(Courtesy of Dr. William L. Russell.)*

While it is impossible to lay down arbitrary rules for planning shops, because the kinds of crafts pursued will regulate the arrangement, the following descriptions

may be helpful. It goes almost without saying that shops should be grouped together as much as possible in order that the director or teacher will have all occupations concentrated and so avoid wasting time and effort going from shop to shop.

Undoubtedly the most luxurious shops that I have seen are in the Men's Pavilion at Bloomingdale. The Pavilion consists of a one story red brick building a little

FIG. 2.—Court of men's occupation pavilion, Bloomingdale Hospital. (*Courtesy of Dr. William L. Russell.*)

distance from the Men's Wards. The inner walls are of buff brick which give a pleasing and bright appearance. The building is U-shaped and on the right of the entrance is the directors' office and a small library. On the left is the room for jewelry workers. Directly opposite is a well-lighted court used for exhibition purposes with cases for displaying the articles made. The right side of the U contains four rooms for reed basketry, weaving, bookbinding and printing. The left side, six rooms for cement work, broom making, brush making

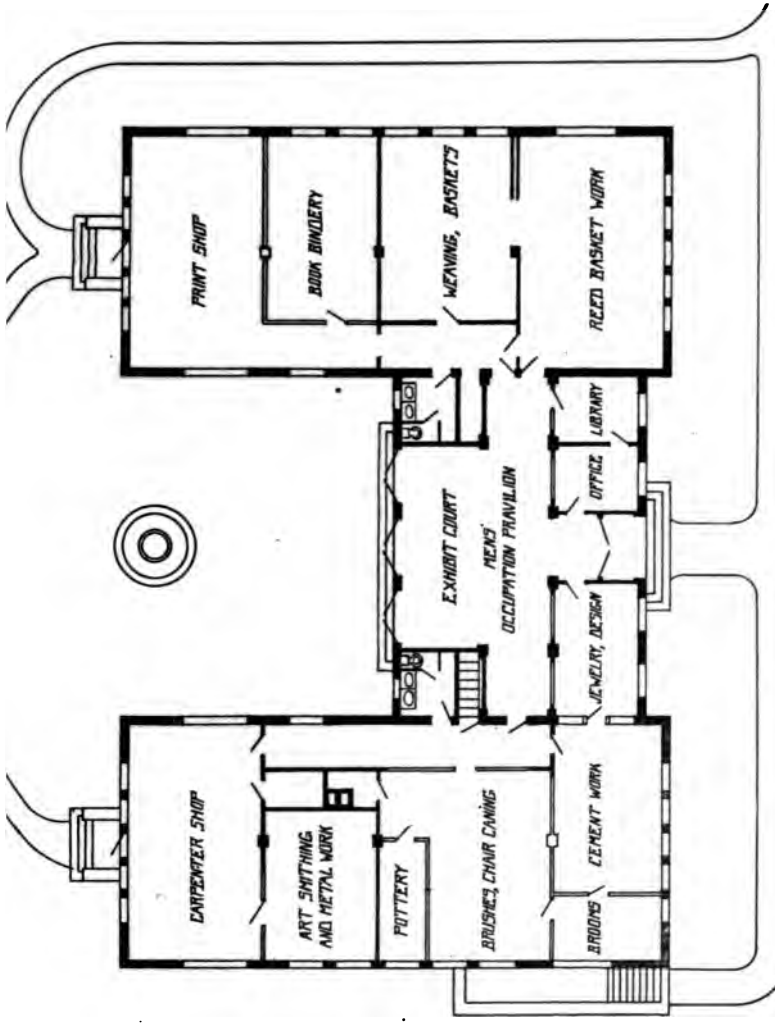


FIG. 3.—Plan of men's occupation pavilion, Bloomingdale Hospital. (*Courtesy of Dr. William L. Russell.*)

and chair caning, pottery, art smithing and metal work, and the carpentry shop. This arrangement groups the quieter occupations at the front of the building, the noisier ones at the back. An excellent description of the building by the Director, Mr. Louis J. Haas, is to be found in the *Industrial-Arts Magazine*, Vol. v, p. 516.

It will be noted that in the above building separate rooms are provided for different crafts. At the New Jersey State Hospital at Morris Plains the industrial building is planned differently. It is a brick building of two stories, each floor being one large room. There are no partitions, each group of workers in a single craft occupying definite floor space, perhaps outlined by cupboards or something similar. This method has the advantage of making supervision easier, but the possible disadvantage of furnishing more distraction to the worker. The lack of high partitions render the problems of light and air less difficult, and the cost of construction was much less than at Bloomingdale.

The Women's Shops at Bloomingdale are in a building originally erected to accommodate patients, but which has been well adapted to its present uses. The porches have been enclosed with glass sash so that pleasant and bright places are provided for certain forms of work. I have also seen a picture of another workshop where enclosed porches are utilized as work rooms. The cheerfulness of such places is undoubtedly a valuable factor in aiding recovery.

At Devereux Mansion, Dr. Hall has transformed what was the barn or stables into a bright, cheerful and convenient workshop. The greater part of one side of the building is used as a weaving room. It is large, with a very high ceiling, probably twenty feet at least, and has large windows placed high up along one side (the north), which makes a most pleasant light for the workers. The other side of the building is divided into two tiers of rooms. At the time of my visit the upper ones were used for storage. The lower are entered from the

FIG. 4.—Industrial building, The New Jersey State Hospital at Morris Plains.
(*Courtesy of Dr. B. D. Evans.*)

weaving room, and are used for individual workers, or for such crafts as carpentry, stenciling and cement work. The latter has developed into quite an important industry although it has not yet reached the point to which Dr. Hall brought pottery. This has been organized as a commercial venture by Dr. Hall and some of his "graduates" and is known as the Marblehead Pottery. Dr. Hall has proved that it is possible to alter a rather unpromising building into an excellent shop.

It would seem that a building erected on the bungalow plan with rather high enclosed porches, not over ten feet broad on three sides, could be erected at a comparatively low cost and would form a delightful working place. Care must be taken not to make the roof of the porch so broad and so low that light is excluded from the inner rooms. A second story could be added if necessary.

The north side should have rather large windows to admit all the light possible to the rooms upon that side. The so-called "daylight" sash used in factory construction makes ideal lighting conditions.

It is a good idea, frequently carried out, to have as much equipment as possible made by patients. As is well known, they take a greater interest in doing work when they know the purpose for which it is to be used, and those who may require a prolonged residence in the hospital will continue to take pleasure in the fact that they helped to equip the building.

The plan as carried out at Bloomingdale of having the noisy occupations, carpentry and metal work, as remote as possible from the quieter ones, such as basketry, is an excellent one, and should be kept in mind when planning shops. On the other hand, no dusty occupation, such as cement work, should be placed close to one requiring fine work. At Bloomingdale this has been found to be a mistake and apparatus for carrying off the dust has been installed.

If it is necessary to use basement rooms they should be made as bright as possible by coating the walls and

ceilings with white paint. A water paint is preferable as it can be renewed frequently with but slight cost.

Above all, neatness and orderly arrangement should be insisted upon in every shop and patients should be taught to clear up before the shop closes for the day.

Miss Tracy has recorded how the plan of the workshop has influenced the methods of her teaching in a paper read at the First Annual Meeting of the National Society for the Promotion of Occupational Therapy.[1]

[1] Proceedings of First Annual Meeting of the National Society for the Promotion of Occupational Therapy, p. 42.

for this reason Monsieur Herriot, Mayor of Lyons, established two schools where the *mutiles* (crippled) were taught new trades, or could learn to adapt themselves to former ones.

The foremost figure in this work, however, has been Dr. Jules Amar, Directeur Laboratoire des Recherches sur le Travail Professionel, 62, Boulevard St. Germain, Paris, who has attacked the subject with scientific knowledge and great common sense. With suitable apparatus he tests the strength of the stump, the respiration (as a part of the patient's physical fitness), the tactile sensibility of those blind, and so forth. He has also devised a very ingenious artificial arm which is said to be quite remarkable.

Doctor Bourillon, Directeur de l'Institut National Professionel des Invalides de la Guerre, St. Maurice, pursues the same methods as Dr. Amar, and utilizes apparatus to exercise and increase the strength of the stump. These two men stand pre-eminent, but there are a number of others who have done notable work in providing prosthetic apparatus for the crippled and in re-educational methods.

A few of the many names which might be mentioned are Dr. Armand Deltenre of the Therapeutic and Orthopedic Institute at Rouen; Major Haccourt, Technical Director, and Dr. Dam, Medical Director, L'Institut Militaire Belge de Re-Education Professionelle, Port Villez, Vernon. Approximately fifty re-educational establishments have been organized in France.

In our own country, Mr. Frank B. Gilbreth, whose work as an efficiency engineer had well fitted him for this work, has made some very ingenious suggestions and has done much to aid both abroad and in this country. It is interesting to compare his method with that of Professor Amar. Mr. Gilbreth believes in fitting the machine to the man, making whatever additions or adaptations are necessary to enable the cripple to do efficient work. Professor Amar on the other hand makes his prosthetic

apparatus in such a way that the man is adapted to the machine. It would seem that Mr. Gilbreth's is the better principle.

In Canada remarkable work has been done by the Military Hospitals Commission, which has established schools for vocational training in practically all of the convalescent hospitals. Here competent teachers give instruction in various crafts, stenography and typewriting, drawing, shop arithmetic, and in fact, anything which will aid the patient to fit himself to earn a living. Several have been taught barbering. All of this work is in charge of Mr. Thomas B. Kidner, the Vocational Secretary, and great credit is due him for the way it has been organized.

Soon after the declaration of war (August 1, 1914) on August 13, 1914, the German Empress requested the president of the German Association for the care of Cripples (Deutsche Vereinigung für Krüppelfürsorge) to continue the work for crippled children and also undertake the orthopedic care of the wounded. The organization was in charge of Dr. Konrad Bielsalski, Secretary of the above association, and practically the same work is carried on as in other countries.

Needless to say, England has not been behind, and a special journal, *Recalled to Life* (London, John Bale Sons & Danielson) records their activities.

As news of this work in progress abroad and in Canada came to this country, some of us recognized that distinct advances had been made over older methods and that here was a splendid opportunity for the rehabilitation of the industrial cripple. A number of us began a period of more special study and research. Among the foremost was Mr. George Edward Barton, who for three years had conducted "A School, Workshop, and Vocational Bureau for Convalescents known as Consolation House."[1]

[1] Consolation House. By its Secretary, Isabel Gladwin Newton. *Trained Nurse and Hospital Review*, December, 1917.

Later with the participation of the United States in the great conflict, others showed an active interest in the subject. Through the efforts of the orthopedists a special branch of military service was created, the Department of Military Orthopedic Surgery. To this department was given especial charge of the re-construction hospitals, which it was expected would be erected by the Government in nineteen of the larger cities.[1]

To the National Committee for Mental Hygiene was given charge of the formation of the psychiatric units and the Committee naturally made provision for occupational treatment in them. In a report to the Surgeon-General, Dr. Thomas W. Salmon, of this committee, made certain Recommendations for the Treatment of Mental and Nervous Diseases in the United States Army,[2] in which he states "None of the methods available for re-education are so valuable in the war neuroses as those in which a useful occupation is employed as the means of training." For this purpose he gives a list for equipping shops "which is necessary at the beginning."

"Smiths' shop:
Forges, tools, etc., for ten men.
Fitting shop:
One screw-cutting lathe, one sensitive drill, one polishing machine, one electric motor 1½ h.p., swages and tools for eight men.
Leather blocking room:
Sewing machine, eyeletting machine, tank, galvanized iron and tools.
Tailors' shop:
Three Singer machines, tools for ten men.
Carpenters' shop:
Selected tools for fifteen men, bench screws and special tools not for general use, wood-turner's lathe.
Machine shop:
Electric motor, 8½ h.p., with shafting, brackets, etc.
Cement shop:
Metal molds, tools for twelve men.

[1] *Science*, September 28, 1917.
[2] *Psychiatric Bulletin*, Vol. ii, p. 355.

Printing shop:
Press and accessories.
General:
Drilling machine, grindstone, screw-cutting lathe, fret-saw workers' machine and patterns, circular-saw bench.

Practically all gymnasium apparatus can be made in the shops after the hospital is opened."

The personnel in charge of such work includes a Major, Chief of the Occupational Division; two Sergeants, in charge of shops, and the following Civilian Employees:

Instructors:		
Outdoor occupations	1	2
Indoor occupations	1	
Assistant Instructors:		
Carpentry and wood-carving	1	
Cement work	1	
Metal work	1	
Leather work	1	8
Gardening	1	
Printing	1	
Gymnasium	2	
Stenographers		4
Photographers		1
Laboratory technician		1
		16

These nineteen individuals are of a total staff of 234, and six of them (stenographers, photographer and laboratory technician) evidently have other duties than educational. Dr. Salmon also says: "The instructor for bed occupations should be a woman, and she should train the female nurses to assist her in this kind of work."

A further recommendation of Dr. Salmon's which is of considerable interest is that "*No soldiers suffering from functional nervous disorders be discharged from the army until at least a year's special treatment has been given.* Furloughs can be given when visits home will be beneficial, but the government should neither evade the responsibility nor surrender the right to direct the treatment of these cases. A serious social and economic

problem has been created in England already through the establishment in its communities of a group of chronic nervous invalids who have been prematurely discharged from the only hospitals existing for the efficient treatment of their illness. So serious is this problem that a special sanitarium—"The House of Recovery," the first of several to be provided has been established in London, and subsidized by the War Office for the treatment of such cases among pensioners."

In another article Dr. Salmon says:[1] "Re-education by physical means is a valuable adjunct to treatment in recent cases but particularly in chronic cases who have been mismanaged and in those who are recovering from long-continued paralyses, tics, mutism and gait disorders. While drills and physical exercises have their specific uses, occupation is the best means. Non-productive occupations should be avoided.

"Occupations are conveniently classified as: (1) Bed. (2) Indoor. (3) Outdoor.

"1. Basket-making and net-making are good bed occupations for cases with extensive paralyses, as are making surgical dressings and various minor finishing operations (sandpapering, polishing, etc.) on products of the shops. All occupations, and especially those which are carried on by patients seriously incapacitated, should be regarded as only steps in a process of progressive education. Every effort must be made to prevent skill acquired in them from being considered as a substitute for full functional activity. Herein is an important difference between the "re-education" of neurotic and orthopedic cases. In the latter the purpose is often to make the remaining sound limb take on the functions of one which is missing or permanently disabled. *The function held in abeyance through neurotic symptoms must never be looked upon as lost.* It can and must be restored and if another function

[1] Thomas W. Salmon. The Care and Treatment of Mental Diseases and War Neuroses ("Shell Shock") in the British Army. *Mental Hygiene*, Vol. i, p. 509, October, 1917.

is developed as its surrogate the day of full recovery is thereby postponed. Bed occupations, therefore, must always be regarded as the first steps in a series which is to culminate in full activity. Progress through achievements constantly more difficult is the key-note of re-education in the war neuroses.

"2. A wide variety of indoor occupations should be provided including at the minimum carpentry, wood carving, metal work and cement work. Printing, book-binding, cigarette making, electric wiring and other work should be added as opportunities permit.

"3. Farming, gardening and building operations are desirable outdoor occupations. Where possible, wood sawing and chopping are very desirable as is the care of stock not requiring much land (squabs, guinea-pigs, rabbits, game, frogs).

"Before even the simplest occupation can be engaged in it is sometimes necessary to re-educate paraplegics and ataxics in walking and co-ordination. Just as soon as possible, exercises should be replaced by productive occupations which will accomplish the same results more quickly and more satisfactorily. The same is true of gymnastic exercises which in the early steps of treatment constitute a valuable resource but which should be replaced by specially devised, useful tasks. Swimming has a unique place in the treatment of gait disturbances, paralyses and tics. One of the first pieces of construction undertaken by the outdoor patients at a reconstruction center should be that of building a large concrete swimming tank.

"Hydrotherapy and electrotherapy have a distinct value when they are applied with absolute sincerity and full realization on the part of patient and medical officer of the rôle which they actually play in the treatment of functional nervous diseases.

"The experience in English hospitals has demonstrated the great danger of aimless lounging, too many entertainments and relaxing recreations such as frequent

motor rides, etc. It must be remembered that 'Shell Shock' cases suffer from a disorder of will as well as function and it is impossible to effect a cure if attention is directed to one at the expense of the other." As Dr. H. Crichton Miller has put it, "'Shell Shock produces a condition which is essentially childish and infantile in its nature. Rest in bed and simple encouragement is not enough to educate a child. Progressive achievement is the only way whereby manhood and self-respect can be regained.'"

The Committee on Nursing of the Medical Council for Defense, made an investigation of possible training places for occupational workers and at their request, I submitted the outline of a training course as follows:

The following outline of suggested courses in training in invalid occupation and occupational therapy may be said to be elaborated from the earlier outline I gave you, and it should be understood that neither represents my ideals. They merely represent the minimum requirements and it should be possible to carry them out in any of the hospitals which I indicated to you. It is, of course, an established fact that early cultural advantages and training of the pupils might make it possible to considerably supplement such courses, and it may also be stated as an axiom that the more "accomplishments" an individual possesses, the greater will be his capabilities. It is difficult to say exactly how much time would be required to give these courses. If it were possible to get college graduates, either men or women, to take up this work, they could probably be given in six weeks of rather intensive work. Probably the same time would suffice for classes of trained nurses. It would seem obvious that just at present the number of men college graduates and trained women nurses that would be available would be very small as they are needed in other branches of service.

It has been found that the personality of those applying occupational therapy is of far greater importance

than skill in crafts. Such a person should possess considerable tact, common sense, and a fertility of ideas and invention. The last so that adaptations can be made for special cases and purposes.

INVALID OCCUPATION

Invalid occupation is intended chiefly to divert and amuse, keeping the mind of the patient from dwelling upon his illness and possibly developing hypochondriacal ideas. In certain cases, therefore, the means of invalid occupation may become of therapeutic importance. For example, a card game might be the best method of inducing a particular case to exercise his fingers.

Puzzles and Catches.—The manner of approach is of great importance and frequently requires the use of much tact. Pupils should have some instruction in this branch. Frequently the play instinct can be utilized to advantage and for this reason it is desirable to have the occupationer collect a number of puzzles and catches of various sorts which may be used to "break the ice" and create a receptive attitude in the patient.

Games.—Card games, such as solitaire, may also be used, and the pupils should be taught at least three of these besides cribbage, fan-tan, hearts, euchre, poker, whist and bridge. Dominoes, checkers and other games should also be learned.

String Work.—On account of its commonness, string is a valuable material which can be utilized in a number of ways. The pupil should be taught a number of plain and fancy knots and braids which may be combined to make useful articles, and promote finger movements.

Rake and ring knitting are modifications of the spool knitter of childhood, with which bags, hoods, sweaters and other useful articles may be made. Hand and forearm movements are chiefly required, the finger movements being few.

Braided rugs may be made from rags. Some sewing is also required.

Hooked rugs, made on burlap, require less finger motion than the last but bring in more movement of the arm and trunk.

Making colonial mats on wooden frames requires but little mental effort and can be used to exercise the shoulder and elbow especially.

Weaving on wooden frames may utilize rags and affords especial exercise for the fingers.

Netting is of practical utility and gives especial exercise to the flexor muscles of the upper extremity.

A knowledge of knitting, crocheting and tatting may be desirable but it is questionable whether time should be taken for their study during a short, intensive course as considerable practice is necessary to acquire skill sufficient to teach them. They might be left for the nurse to develop herself.

Paper Work.—Paper folding and cutting may be utilized to teach a knowledge of geometrical forms and design to make patterns, which may be used in wood or metal work.

Cardboard construction may be used for the same purpose. It may be easily conceived how useful such knowledge may be to certain mechanics. Finger and forearm movements will be especially required for such work.

Basketry.—A number of materials may be used for this work. The utilization of those indigenous should be emphasized, and useful forms should be taught.

Basketry is especially useful for finger and forearm movements and training concentration of attention.

Wood Work.—With work bench and ordinary carpenters' tools it is possible to provide many problems which may require a great variety of movements, from simple movements of arm and forearm, as in chip carving, to those using the muscles of practically the whole body, as in planing a piece of hard wood.

A jig-saw should form a part of the equipment as its use is an excellent way of training the attention and the pedal motion may be used for leg exercise. The larger

forms of foot-power saws have a wheel which gives motion similar to the bicycle and could be well utilized in certain cases of functional paralyses. Sand papering, the use of the wood rasp, brace and bit, hammer, etc., all have definite value in exercising special groups of muscles. The student should be encouraged to work out a number of these unassisted.

Metal Work.—While a proper study of metal work will require a considerable period, certain simple forms can be taught which have a definite value in muscle training and which will perhaps appeal to certain workers who would not be attracted by anything else.

Pierced metal, as for plain escutcheons, will use but little more than arm movements. Hammered metal will require arm, trunk and possibly leg muscles, depending upon the character of the piece made.

Plastic Work.—The chief value of clay modeling is the variety of finger motions required so that they are exercised without the fatigue consequent upon more stereotyped movements. While it is unlikely that a St. Gaudens will be found among the patients, a knowledge of how to express one's self in form is of value. Modeling is required commercially for hardware, lighting fixtures, jewelry, etc., so that this training may be helpful to some patients. Oil clay, plasticine, etc., should be provided and pupils should be taught the principles of taking plaster casts.

Sufficient cement work should also be given so that its possibilities are understood.

School Work.—Under this term may be included mechanical drawing, shop arithmetic, stenography, bookkeeping, penmanship, and any other similar branches. In a short course, it would be impossible to expect pupils to become sufficiently expert to properly teach any of these branches. They could, however, within a very short time, probably in one lesson, be taught the principles and shown the manner of using books of instruction. In a sufficiently large unit

specialists on such subjects could be members of the staff.

Typewriting should be included in the above list and various attachments to be used by cripples (or labor-saving devices) should form part of the equipment.

In all of the above work, talks on the source, possibilities, etc., of materials, or literary references, may make the subject more interesting to the pupils and make firmer associations. The course should also include the following:

Lectures.—Definitions and uses of Invalid Occupation, Occupational Therapy and Vocational and Re-vocational Training; psychology of recovery by occupation; the value of "hobbies;" manner of approaching patients; the use of puzzles and catches; the utilization of waste; fatigue and its dangers; bones, muscles and joints (if a knowledge of their mechanism is lacking).

Games.—I presume that games, such as catch, volley ball, etc., will be in charge of the Y. M. C. A. directors. The possibilities of these for restoring function should be kept in mind, and should be pointed out to the pupils.

OCCUPATIONAL THERAPY

While the above indicates some of the possibilities of muscle training afforded by craft work, there are many which must be worked out for individual patients. Such work has great value as the patient's attention is directed to an object and away from himself, and he learns motion unconsciously and naturally.

Certain cases may require other measures, so that instruction should be given in massage, hydrotherapy, Frenkel's movements, etc. This should be given to another group than the craft workers.

A course in massage should be given by a qualified teacher, and will require from eighteen to twenty-four hours.

A course in hydrotherapy would require from twelve to eighteen hours.

As these are given by prescription of the physician, the mental qualifications of such pupils are not necessarily so high as for the course in Invalid Occupation.

The orthopedists, or such men as Dr. Wm. J. M. A. Maloney or Dr. Shepherd Ivory Franz, are much better qualified to detail the requirements for a course in movements than myself, and I would suggest that they be consulted.

It is to be emphasized that utility should be the dominant principle of every piece of work undertaken. Unless this point is emphasized the patients are very apt to regard the work which is given them, especially the bed work, as "trifling." It will probably be well in many instances to explain the object which it is hoped will be attained, for example, to exercise certain groups of muscles.

VOCATIONAL RE-EDUCATION

While the major part of such instruction must be in the hands of "technicians," it is believed that the patient can be prepared to take up such work by the occupational teacher better than by the technician, who has not quite so broad an education and therefore cannot take such a comprehensive view of the subject as can the former. Many patients will be able to resume former occupations after some instruction and practice in the use of prosthetic apparatus. Others must be taught a new trade or occupation and learn to adapt themselves to it with the use of apparatus.

It is necessary that close touch be kept with the various shops which are working under active commercial conditions. Arrangements should be made, as I believe they can, that the crippled soldiers may have actual shop experience before being discharged to civil life.

The Federal Board of Vocational Education can probably aid greatly in assisting the technicians to keep up

their knowledge of better trade methods. Men like Mr. Frank B. Gilbreth, the efficiency engineer, can also aid greatly in devising labor saving methods and devices.

The Red Cross also formed plans to provide invalid occupation as a part of its nursing service, and were aided by the presentation to them of a very comprehensive outline by Miss Sarah Atherton, a social service worker of Wilkes-Barre, Pa.

Before any definite plans were published by the United States Government, the Chicago Chapter of the Red Cross gave a six week's course at the Henry B. Favill School of Occupations, Illinois Society for Mental Hygiene, under the direction of Mrs. Eleanor Clarke Slagle.

This was attended by twenty young women, not necessarily nurses, who preferably had had social service training or special work in sociology or social economics.

The crafts taught were:

Elementary bookbinding;
Weaving, both simple and advanced;
Basketry;
Rush seating;
Cane work;
Leather tooling.
Rug making, braided, hooked and crocheted.

The Chicago School of Civics and Philanthropy later gave a course in conjunction with the above as follows:

(Winter Term, January 2 to March 15)

Lecture Courses:

Administration of charitable institutions—2 hours.
Medical agencies in relation to social service—2 hours.
Industrial and public hygiene—2 hours.
Principles of case work—1 hour.

Section 304 reads as follows:

That in cases of dismemberment, of injuries to sight or hearing, and of other injuries commonly causing permanent disability, the injured person shall follow such course or courses of rehabilitation, re-education, and vocational training as the United States may provide or procure to be provided. Should such course prevent the injured person from following substantially gainful occupation while taking same, a form of enlistment may be required which shall bring the injured person into the military or naval service. Such enlistment shall entitle the person to full pay as during the last month of his active service, and his family allowances and allotment as hereinbefore provided, in lieu of all other compensation for the time being.

In case of his willful failure properly to follow such course or so to enlist, payment of compensation shall be suspended until such willful failure ceases and no compensations shall be payable for the intervening period.

This, it will be noted, makes no appropriations, so that it is practically inoperative. It was claimed, however, that this section placed the care and responsibility for the rehabilitation of United States disabled soldiers and sailors upon the War Risk Bureau of the Treasury Department. Obviously, other Governmental Departments, such as the War and Navy, were more concerned with the care and training of men and were better qualified to carry these out than the War Risk Bureau. The Federal Board of Vocational Education showed an active interest in the subject, and two of its research workers, Dr. John Cummings and Miss Elizabeth G. Upham wrote the greater part of Bulletins 5 and 6, dealing with the subject.

Senate Document No. 173 which was transmitted by Mr. Newton D. Baker, Secretary of War, on February 4, 1918, gives the plans of the Surgeon-General of the Army for the Rehabilitation and Vocational Education of Crippled Soldiers and Sailors. The original memorandum had been sent to Mr. Baker November 7, 1917, and was followed by additional memoranda, December 4, 1917. In these, elaborate and admirably conceived plans were made for the functional and vocational educa-

tion of wounded soldiers. A receiving hospital was planned to be located on Staten Island or near any other receiving ports that might be selected. At this hospital the patient's vocational and social history was to be taken on prescribed blanks, and he would also be examined by the proper medical officer. The patient might be transferred to one of the hospitals in his home district, or if fit to pursue his former occupation, would be recommended for discharge. If the patient had attained the maximum curative results possible, but was unable to continue his former occupation, the vocational officer was to direct what occupations were possible for him. The patient would then be sent to a general hospital in his home district, and from there sent to the school selected for his further training. Those who were too badly crippled to follow any occupation, even after training, were to be sent to a general hospital in their home district, or might be discharged to the care of capable relatives or friends.

Excellent plans were made for vocational training, and commercial schools were to be established at the hospitals. Training in agriculture and the professions was to be carried on at schools already established. Monetary assistance would be given when necessary, and a medical officer would be sent to have charge of such men. It was also planned to have an employment agent at each hospital who might secure positions for the men when they should become qualified. While the whole plan was tentative, its details were well worked out. The Document also contains other matter of interest.

On January 14, 1918, a conference was held in Washington, attended by representatives of the War, Navy, Interior, Treasury, and Labor Departments, the Federal Board of Vocational Education, the Public Health Service, Council of National Defense, Red Cross, and a number of others, at which a committee was appointed to draft a bill, which was reported to the con-

ference on January 21, 1918. This bill repealed the above quoted section, and created a Board for Vocational Rehabilitation to be composed of one representative respectively from the Department of War, Navy, Treasury, Labor, and the Federal Board of Vocational Education. These were to serve without compensation, but were to be re-imbursed for any necessary expenses. It was authorized to organize three advisory committees on Agriculture, Labor, and Commerce and Manufacture, the members thereof to serve without compensation, but to be paid their necessary expenses. The bill provided for the co-operation of all the departments concerned and for the medical care of the men under the respective departments of the War and Navy. An appropriation of $200,000 was provided for the fiscal year ending June 30, 1918. This bill was not passed and another was introduced and passed, which put this work under the Federal Board of Vocational Education.

In the meantime the Orthopedic Division of the Surgeon-General's Office had created the position of Reconstruction Aide, of which there were two classes. The first were to give massage and various forms of exercise, the second to give invalid occupation. The requirements for these aides, especially as to personality, were rather exacting. The recompense was quite small, but fifty dollars per month with maintenance being paid for home duty, with an increase of ten dollars for foreign duty. Courses given at Teachers College and Franklin Union were endorsed and a school was planned in Washington to be conducted by Miss Marguerite Sanderson under the supervision of the Orthopedic Division.

Without doubt the most constructive work has been that carried on at the Red Cross Institute for Crippled and Disabled Men in New York under the direction of Mr. Douglas C. McMurtrie. Through the generosity of Mr. Jeremiah Milbank who gave $50,000 and the use of a building, it has been possible to create a

splendid institution. A number of research workers have made special studies which are generously shared with others through the Institute's "Publications." In discussing the work of the Institute Mr. McMurtrie says:[1]

"It is planned that the work of the Institute in the vocational rehabilitation of crippled men shall be permanent, for it must be borne in mind that the problem of the industrial cripple is the greater, numerically considered, than that of the crippled soldier.

"The Institute has no official arrangement with the national authorities relative to the utilization of its facilities in the reconstruction of war cripples. Had it waited for such an agreement, its work would not yet have been under way. But the Institute is confident that, in working out the national scheme of re-education, existing facilities of real value cannot fail to be utilized. The present effort is solely to make our facilities worth offering, at a time when other plans may exist on paper alone. This our duty is conceived to be."

It had been my intention to include a short bibliography of works relating to the war and occupation therapy besides those already quoted, but the literature has grown to large proportions. Also extensive bibliographies have already been published in other places; therefore, the list of works pertaining to the rehabilitation of disabled soldiers and sailors has been greatly curtailed.

The best summary which has yet appeared is by Dr. John Cummings of the Federal Board of Vocational Education, published as Senate Document No. 166, and as Bulletin No. 5 of the Board, entitled Vocational Rehabilitation of Disabled Soldiers and Sailors. This contains a splendid bibliography.

An earlier publication, *The War Cripple*,[2] by Mr.

[1] The Organization, Work and Method of the Red Cross Institute for Crippled and Disabled Men.

[2] Columbia War Papers, Series 1, No. 17, Columbia University, New York, 1917.

Douglas C. McMurtrie, is also excellent. Mr. McMurtrie has also compiled a bibliography of The War Cripple.[1]

In the *Monthly Review* (September, 1917) of the Bureau of Labor Statistics, U. S. Department of Labor, there is a very complete bibliography of Vocational Education, and Employment of the Handicapped, with Special Reference to Crippled Soldiers, revised to October 12, 1917. All three of these are easily procurable.

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[1] Publications of the Red Cross Institute for Crippled and Disabled Men, No. 1.

CHAPTER XI

PROSTHETIC APPLIANCES

Doubtless, Mr. Occupational Director, in traveling through life you have seen a cripple on the street or by the roadside, and have thought him unfortunate in not being able to work. Or again, you have seen one so maimed and disfigured that he was painful to look upon. Doubtless, you have occasionally had the wish that you might do something to help these unfortunates, but stress of other matters, or a feeling of the bigness of the task, has caused you to defer any plans you may have made. In every community, large or small, there are individuals who are crippled or deformed in some way or other. It may be that they only need glassing to increase their efficiency and working ability. A knowledge of some of the mechanical aids which have been devised to help this group may be useful at some time or other and increase *your* efficiency; therefore, I tender no apology for introducing the above subject.

This term while ordinarily used to include only those things which are fitted to the body to supply missing members, either for æsthetic or practical purposes, is here used in a broader sense to include all appliances, whether attached to the person or not, which may in any way aid the crippled.

In the beginning it may be stated that great difficulty has been found in obtaining information, a difficulty which it is hoped will soon be overcome through the researches of a laboratory which has been established in connection with the Surgeon-General's Office.

Up to date, however, it has not been possible to obtain much information from those in charge of the laboratory

and the most satisfactory sources have been the manufacturers of the various appliances. Naturally, the information thus obtained has not been tempered by unfavorable criticism. It is but just to state, however, that I have found no case of misrepresentation, and in a number of instances have felt that the manufacturer has been quite modest in his claims. What was most lacking has been information as to defects or weaknesses, which the maker could be no more expected to point out than a mother the defects of her offspring.

Artificial legs are the first form of prostheses, which come to mind. The simplest form is the peg-leg, consisting of two pieces of hickory running up each side of the stump, and set in a block or base forming the foot. The outer or longer strip extends to the waist, to which it is attached by a belt. The inner ends slightly below the crotch. The stump, in thigh amputations, rests on a pad placed on a wooden support held in position by the two side strips. When the amputation is below the knee, the leg is flexed and the patient kneels on the pad. These peg-legs are comparatively cheap, about $10.00, but are unsightly. Certain of the laboring class prefer them to the more elaborate and more expensive forms owing to the ease of repair, which may become frequently necessary with rough usage. Another form of peg-leg is turned and has a socket into which the stump fits. These are probably more comfortable and are more expensive costing as high as $65.00. Still other forms are carved.

A very ingenious peg-leg for temporary use which has a number of advantages, is described in the *Military Surgeon*.[1] As the article states: "In leg amputations, early functional use as a requisite for end bearing has already been discussed.[2] To provide properly for this, some form of temporary appliance must be supplied as soon as the stump becomes sufficiently hardened by the

[1] Vol. xlii, p. 490, April, 1918.

[2] *Military Surgeon*, Vol. xlii, p. 164, February, 1918.

routine treatment prescribed. The use of such an appliance also shortens the period of incapacity for work and thus enables the vocational treatment to be begun much earlier. The benefit to the patient's morale is obvious." Also, it is easily fitted by the surgeon, quickly replaced when any change occurs in the stump, and is of slight weight. While more exact directions are given in the original, its application may be described as follows: Two wooden side strips or supports, attached to the foot-piece are prepared in advance. A piece of quarter inch felt is fitted about the stump, the edges stitched together, and a 2-inch cuff turned down at the upper end. When fitted to a thigh stump the upper edge is brought against the ischium, the patient holding the felt against this point by means of traction on a piece of bandage passing under the perineum. A single 5-inch plaster-of-Paris roller is passed over the felt, excepting the cuff, and a 5-inch plaster plate is applied on the inner side, also pressed against the ischium. A short piece of webbing is attached to the front of the cast and a longer piece at the back by turns of the bandage so that when joined by a buckle this strap goes over the opposite shoulder to hold the socket against the stump. The wooden side pieces are then laid in position and are held in place by turns of the plaster-of-Paris bandage. In some cases there may be chafing of the shoulder which can be avoided by an ingenious arrangement of cords and pulleys made from a pair of suspenders. The stump may be protected or padded by bandaging with Japanese crepe. For temporary use it does not seem possible to equal this very ingenious device. Its cheapness is also very much in its favor.

To the better and more complicated legs is a great advance both in appearance and price. I have seen a man with two artificial legs walk so well that I, who thought that he had one natural leg, could not tell which one was artificial. This I considered a strong endorsement of the mechanical action of the leg. This leg, the

Hanger, and the Rowley leg (Figs. 5 and 6) have been used very extensively by the French and the British. The former has a mechanical foot and ankle action, the latter, a mechanical ankle and rubber foot. Each costs

FIG. 5.—The Hanger leg.

about $100.00. Other legs have sponge rubber feet without mechanical ankle action, as the Marks. There are also forms having pneumatic or felt feet. Each kind has its advocates. It is probable that the form to

[illegible]

Fig. 6.—The Rowley leg.

An adjustable leg has recently been introduced, the mechanical features apparently being sacrificed, but this leg does not seem to me to be so good as the others.

There is one form of leg which has what is called a slip socket, there being an inner socket, fitting closely about the stump, hung from the attachment about the thigh. It is claimed that this is more comfortable and less likely to injure the stump than those having a single socket.

Red willow is said to be the best material for sockets, but a few prefer one made of raw hide. A plaster cast is usually made of the stump, and the socket whether of wood, leather, or raw hide is fitted accurately to it. Special socks are worn so that the skin of the stump will not become irritated. The slip socket is claimed to avoid this absolutely. Sometimes the stump shrinks so that it may be necessary to wear a number of these socks, or in extreme cases to have a new socket made.[1]

It is generally conceded that the best mechanical arm for finer movements is the Carnes (Figs. 7 to 9). It is expensive, costing about $250.00 and cannot be used for any heavy work. For the finer movements, however, it seems to be the best. I have seen a man using two of these arms enter a room carrying his hat in one hand, his bag in the other, lay each down and go through other movements without any of us recognizing that he had not his natural members. This same man later demonstrated how he could take off and put on his necktie and collar, use a typewriter and perform many other acts which I had thought impossible for him to do. The first was accomplished with a small instrument like an elongated loop glove buttoner. The typewriting by means of a rubber tipped pencil held in each hand.

The illustrations of Dr. Amar's patients which are reproduced here (Figs. 11 and 12) show how much can be done with the arm which he has elaborated. It appears to compare very favorably with the Carnes arm.

[1] For further information concerning artificial legs see Principles of Design and Construction of Artificial Legs. By Captain Philip Wilson, U. S. R. Publications of the Red Cross Institute for Crippled and Disabled Men, Series 2, Number 2, July 10, 1918.

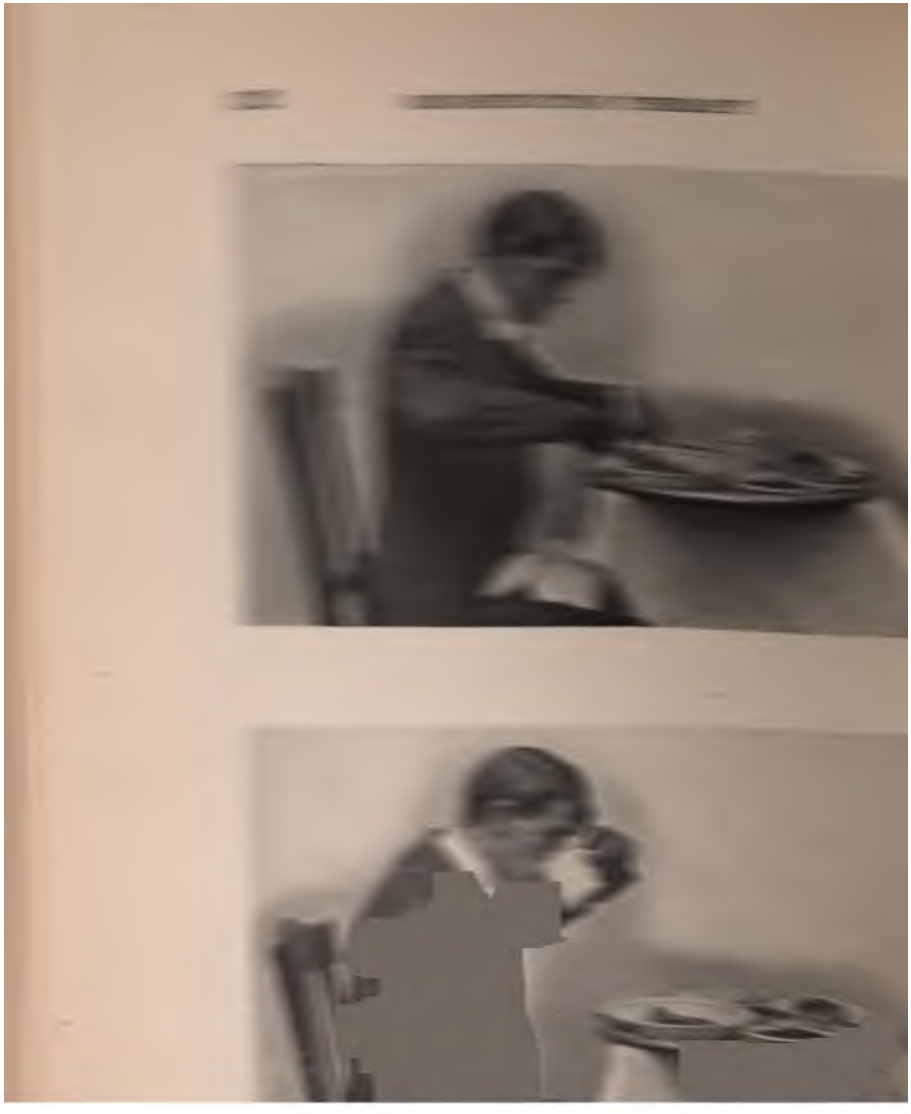

FIG. 8.—Carnes artificial arm.

FIG. 9.—Photographs of Mr. C. E. Huffman, Hickory, North Carolina. Double Amputation: Right, 5½ inches from the shoulder; left, 7 inches below elbow. (*Courtesy of Carnes Artificial Limb Co.*)

[illegible] the so-called safety-rope which may consist of two hooks held together by strong springs or rubber bands, and which

Fig. 10.—The Dorrance hook (closed and open).

may be separated by a cord attached to the shoulder of the opposite side. There are several makes of this which is properly called the Dorrance Hook. With it a man can hold a rope and support his weight. It is not

likely to get out of order and can be easily repaired by the wearer. The cost is $100.00. For æsthetic reasons a hand may be slipped over the unsightly hooks. This is arranged to be used for movements requiring little strength, such as taking off the hat, or handling a knife, fork, cup or glass.

FIG. 11.—Violin player with Amar arm.

Other utility arms consist of a series of metal clamps and joints. There are a number of these forms. Those used by Dr. Amar are shown and need no description. Similar arms are used by the English and the Canadians.

The same sort of socket for a temporary leg that has been described (see page 126) may be combined with a clamp, hook, or other attachment to form a temporary

utility arm. Referring to the use of temporary arms it is said: "In amputation of a single arm it seems preferable for the patient to first acquire the greatest possible facility with the remaining arm. In amputation of both arms, however, a simple appliance that can be used as soon as the stump is healed is of great advantage."

Readers of Dickens will remember that Captain Cuttle

FIG. 12.—Amar arm used in typewriting.

had an artificial arm, which usually bore a hook in the end but which could be replaced by a fork or other utensil.

This same form of arm can be purchased to-day. The utensils may screw into the socket or be held in position by a spring catch. It is possible to procure many forms of hooks or clamps, knives, forks, and nail or hand brushes, specially designed to use with the various makes of arms. Ingenious cripples have frequently devised special attachments for their own particular

FIG. 13.—Carpenter using the Amar claw.

uses. Mr. C. N. Underwood has described[1] several invented by one of the best mechanics of the Remington Typewriter Company, a man with ankylosed joints from bust to knees, due to sciatica and inflammatory rheumatism from which he has suffered for thirty-seven years. Previous to his affliction he was a machinist but since has learned the trade of jeweler and is now a

FIG. 14.—Carpenter using the Amar claw.

toolmaker. He works either sitting or standing. Like many of the crippled he has devised very ingenious devices to aid him in the everyday operations of life, such as dressing and undressing. The rigid joints of his body prevent his bending and he has therefore devised tongs for picking up articles from the floor, for drawing on his socks, etc. He uses the point of his crutch for removing his shoes and socks. His crutches are unusual

[1] *Journal of the American Society of Mechanical Engineers*, Vol. xl, p. 58, January, 1918.

and are his own design. The one used on his right side has a ring on swivels through which the arm is passed. This enables him to let go of the crossbar or grip of the crutch and work at the machine without any danger of

FIG. 15.—A simple hook. Bill Watkins lost his hand and the lower third of his forearm by an explosion of dynamite. He was fitted a short time after with a work arm having a raw hide socket. Gaining flesh he outgrew this and did his work with a cotton pad tied over his stump. A fellow employee, an electrician, was using a Carnes arm and became interested in Bill, making him a willow socket, covered with leather and a new hook. The catch for holding the latter was taken from the old artificial arm. The form of the hook is noteworthy.

the crutch getting away from him. By letting go of the grip and supporting himself by his forearm in the ring, he can carry objects which he could not otherwise grasp with his hand holding the crutch.

The other crutch has no upper support fitting into the axilla, but the supports are joined at the bottom forming a point. This rest against the outer side of the arm (Figs. 18 and 19).

One rather ingenious appliance was described to me by a contractor of West Virginia who had employed a

Fig. 16.—Pushing a lawn mower with a simple hook.

negro laborer whose left arm had been amputated at the shoulder. In using a shovel, it may be looked upon as a lever with the hand holding the shovel midway as the fulcrum. In order to supply this fulcrum, the laborer used a surcingle, a broad webbing belt used to hold blankets or saddles on horses, which was passed over the right shoulder and around the shovel handle at the point ordinarily grasped by the fulcrum hand. The

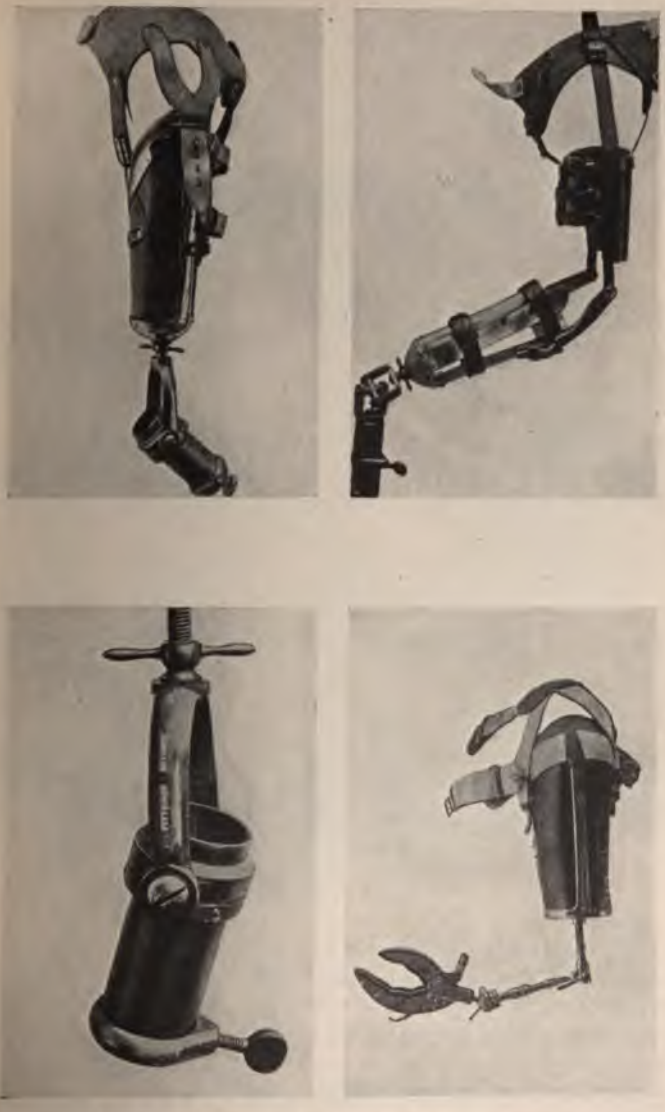

FIG. 17.—Foreign toolholders and grips. (*Harper.*)

left foot drove the shovel into the ground, the body was raised and the right hand depressed the handle, thus bringing the shovel with its load of dirt to an approximately level position. The man's right arm was powerful enough to throw the dirt a little farther than the average pick and shovel man. Unfortunately, he was a periodic drinker, and was lost sight of before any effort could be made to improve his position in life.

FIG. 18.—Special crutches.

FIG. 19.—Devices for dressing.

Photos by F. B. Gilbreth.

Fig. 20 shows a belt with an attachment to hold the upper end of the shovel, the lower hand acting as both power and fulcrum. It is obvious that such an arrangement cannot be so satisfactory as the simpler apparatus described above. Figs. 21 and 22 shows French agriculturists with double forearm amputations whetting a scythe and spading [illegible] of simple appliances. Apparently

a number of different forms of hooks and clamps have been devised abroad. Several of these are shown in Fig. 17.

For work purposes, the simpler the apparatus the more apt is the wearer to like and use it. It is also much

FIG. 20.—Belt with special apparatus for shovelling, model Jullien.

easier to repair and replace. Fig. 23 shows a wood turner who uses a simple wooden socket, which can be turned from wood, to hold his chisel, which he could very easily replace himself.

In the comparatively simple matter of selecting

crutches care should be taken to choose those which will not cause fatigue. It is obvious that a light, slender person can use a lighter crutch than a stout and heavy individual. Even for the latter a light but strong

FIG. 21.—Mutile with double forearm amputation and blind in right eye, whetting a scythe by means of the grip, Simon, and toolholder, Lauter.

wood such as rattan can be substituted for the heavier hickory. Then too, a padded strip of leather makes a more comfortable support and is less likely to cause crutch palsy than wood, even though it be padded. Some users of crutches claim that there is no excuse

for crutch palsy, that the person using the crutch should support himself with the hands upon the grips rather than upon the head of the crutch, but this I believe, is rather difficult for the beginner to acquire and the tendency is to rest most of the weight upon the support.

FIG. 22.—Mutile with double forearm amputation working with a spade. Right arm with single hook; left arm, ring-hook Aubert.

Many modifications of crutches have been suggested. one of these provides a swinging support between the crutches upon which the patient sits. From the rather inadequate description given, it would appear difficult to accomplish this.

Another is a so-called rolling crutch, described by Dr. Robert G. Hall,[1] for which many advantages are claimed due to the addition of an arc to the bottom and to extra hand grips placed in front of the usual ones. The arc as described varies from 14½ inches to 31 inches. The latter length can be folded to 12 inches. These

FIG. 23.—A French wood turner, Montpelier school, using simple tool holder.

crutches have the disadvantage of weighing 69 and 74 ounces as compared to 26 ounces for the old style. It is conceivable that the effort to manipulate them might counteract the fatigue saved by easier locomotion. It is also possible that the 12- or 14-inch arc might prove somewhat inconvenient when not in use, as in crowded

[1] *Journal of the American Medical Association*, Vol. lxx, p. 666.

vehicles or halls. From the list of their advantages as presented, it would seem, however, that these crutches should be tried before being condemned.

It is frequently possible to modify some implement so that it can be used by a cripple. For example, in Fig. 24, *a* shows an old form of dandelion or plantain digger made from a broomstick, three 5-inch wire nails, and some fine and coarse wire. The coarse wire forms

FIG. 24.—Adaptations of simple tools for one-armed worker: *a*, original form of weed puller; *b*, same modified for use of one-armed worker; *c*, trowel mounted to prevent stooping.

a discharger after the weeder is loaded. *b* shows the same instrument modified with a lever which makes discharging easy with one hand so that it can be used by a one-armed person. As this instrument so constructed makes holes an inch and a half in diameter in the lawn, a slim jim trowel was mounted in a stick, *c*, to fill these without stooping, thus eliminating fatigue. A nail or screw in the handle of the weeder makes it possible for the one-armed person to carry a basket for the weeds.

Fig. 25 shows a mowing machine seat modified for a driver with a thigh amputation.

It is important that everything possible be done to eliminate fatigue for workers. This has been preached for some time by the Gilbreths. As they have shown, raising or lowering a chair to bring the worker to a proper level at the bench, putting springs under a chair to dimin-

Fig. 25.—Seat of a mowing machine modified for a driver with a thigh amputation. (*Designed by M. Dor.*)

ish vibration, providing footrests, arm supports, back rests, etc., may have a great influence in reducing fatigue. It is obviously more important that the cripple whose physical power is diminished should have it conserved in every way possible. Study should therefore be made of fatigue eliminating devices and methods.

E. Muirhead Little has described[1] what he calls a

[1] Notes on Artificial Limbs for Soldiers and Sailors. *American Journal of Orthopædic Surgery*, Vol. xv, p. 596, August, 1917.

tilting table for cases who have had disarticulation of the hip-joint and which "enables a patient with this mutilation to walk better than one who has less than 6 inches of the femur remaining. The not very descriptive term of tilting table is applied to a stiff leather socket which is accurately moulded upon a plaster cast of one-half of the pelvis, and retained in position by a steel pelvic band and appropriate straps. To this a steel upright is riveted, which is jointed at the site of the hip and continued down to artificial thigh and leg pieces of the usual kind. The joint at the hip is controlled by a ring catch or other lock, and a similar lock is sometimes added to the knee."

As has been said, many of the artificial limbs have been invented by persons who were so unfortunate as to lose their natural member, and who became dissatisfied with the limbs on the market. The inventor of the Carnes, Arm, Mr. William T. Carnes, was a machinist who lost his right arm 2 inches above the elbow. Mr. J. E. Hanger lost his leg during our Civil War. Mr. Lowell E. Jepson, the inventor of the double slip socket, wore an ordinary single socket leg for fifteen years before he hit upon the device to diminish chafing of the stump. An especially notable and interesting instance is that of Judge Quentin D. Corley of Dallas, Texas, whose life has been an excellent example of pluck and perseverance in overcoming difficulties. Early in life he showed a skill in mechanics, but after graduating from school became a stenographer, also studying civil engineering during his spare time. In September, 1905, while on his way to an eastern college to take up a course in civil engineering he was so unfortunate as to be badly injured in attempting to board a train. This necessitated the removal of his right arm, shoulder-blade, and collar bone, as well as his left hand. It should be remembered that in operating artificial arms, the gripping movement of the hand is accomplished by cords going over the opposite shoulder. As Mr. Corley had no right shoulder it was impossible to fit such a hand

FIG. 26.—Judge Corley writing with his special device.

to his left arm. He has, therefore, evolved a very ingenious apparatus with which he can write very legibly, folds up letters, puts them in envelopes, puts a pen point in a holder, turns leaves of books, picks up large or small objects, takes money out of his pocket, turns

Fig. 27.—Judge Corley writing with his artificial hand.

door knobs, carries grips or other articles, puts on his collar and tie, fastens buttons, bathes himself, combs his hair, puts on underclothes, laces shoes, uses toothbrush, uses knife, fork and spoon in eating; plants, spades or hoes in his garden, mows lawn, winds up and plays

FIG. 28.—Judge Corley using his collar and tie machine.

phonograph, strikes matches and builds a fire, runs automobile, bowls ten-pins, drives a horse, swims and dives. The above list is quite long enough to prove that Judge Corley can do all that is required of a person living a normal life. As might be expected, in perform-

FIG. 29.—Judge Corley using a special tool holder.

ing some of these acts, certain accessory apparatus is necessary. One of these is shown in the collar and tie machine. Also in hoeing and digging the appliance plays but a slight part, and any man with an elbow stump and two legs, possibly both artificial, can do the same, if he has the "will" to do it. The hoe is picked

up with the foot, the handle held against the body with the arm, and, while standing on the left foot, the right foot presses against the back of the hoe or handle, forcing it into the ground. Digging is accomplished in a similar way, the right foot forcing the long handled shovel into the earth, the right knee being used as a fulcrum and a movement of the body throwing the dirt to one side.

The appliance is described as follows: A leather cuff fits the arm above the elbow and another below it. To these are attached side strips of steel hinged at the elbow. The lower end is formed of a flat piece of steel into which is screwed the appliance. This is shaped somewhat like an anchor or double hook, one of which is longer than the other. Each has a smaller hook on the end which serves many a useful purpose. Underneath the hook is a piece of spring steel which holds tight against the hooks. This spring plate is opened by means of a wheel attached to the hooks, which is worked by a lever to which a string is attached, the other end of which is attached to the cuff above the elbow. When the elbow is bent the lever is fixed and the straightening of the elbow causes the spring plate to open and shut. This enables the wearer to pick up papers, pins, and anything light.

In bowling Judge Corley uses a special apparatus which works on the same principle as ice tongs, except that there are two prongs on each side instead of one. These are fastened to a ring through which the forearm is passed. The jaws clamp firmly around the ball and are held by a catch, which is released by a slight movement of the forearm when the ball is delivered.

To the steering wheel of Judge Corley's automobile is attached a ring about 6 inches in diameter set vertically in a swivel. With the hook attachment grasping this, he steers his machine well. Cranking is done with the appliance or his foot. The light tank is turned on by means of a square hole in one hook.

Judge Corley has invented a number of other appli-

ances, somewhat different from that described above for light work, one of which he calls a work hook for use in driving a team, holding a plow, using a saw, hammer, spade, or carrying heavy articles. He also has a "hand" which is æsthetically an improvement over his "hook." Fortunately for those afflicted a company has been formed for the manufacture of these articles.

FIG. 30.—Judge Corley driving his automobile.

In a periodical[1] there was shown a picture of an "armless" man with two short arm stumps who drove an automobile by means of a special steering wheel in which the spokes were replaced by rings into which the stumps were thrust.

Dr. Sutton, one of our best billiard experts, is "armless," having two stumps ending just above the elbow joint. He is said to have a wonderful delicacy of touch. In playing he uses a special bridge which

[1] *Every Week*, August 14, 1916.

he places, then rests the handle upon his left knee which he raises, so making his shots while standing upon his right leg. The cue is grasped between the two stumps. He first took up billiard playing as a diversion but developed such skill that he has practically been forced into the professional class. He is also said to be an expert golf player.

These are but few of many instances which might be cited of individuals who have been able to discount serious handicaps by means of a strong determination and a will to succeed.

If the crippled patient is stimulated by accounts of others who have overcome their handicaps, it seems unquestionable, that he will make the greater effort to overcome his own difficulties. (Since this was written it has been stated in the *New York Times Magazine*, May 12, 1918, that a wonderful book is being compiled in the Surgeon-General's Office, "In which the life stories of maimed and crippled men who have overcome their handicaps are told in simple but convincing fashion.") A collection of pictures and descriptions would probably be helpful for this purpose. It may not be generally known that Sir Richard Calmady in Lucas Malet's popular novel of that name is drawn from Arthur MacMorrough Kavanagh who was for nearly twenty-five years a member of the English Parliament. Although he was born with the merest rudiments of arms and legs, he could fish, shoot, draw, paint, and write. He rode to hounds in a specially constructed saddle, guiding his horse, with the reins wound around his rudimentary arms. He was active in his community in many ways, besides in the broader field of Parliament. A perusal of the book, Richard Calmady, might perhaps inspire others less seriously handicapped.

[illegible] individuals with one natural arm prefer to go [illegible] life without any assistance from an artificial [illegible] This is especially the case where the stump is

of elbow length or longer, yet I have seen persons with a shoulder amputation who did not wish "to be bothered" with an artificial member. It should be understood that it is difficult to fit an artificial arm which will give much motion unless there is a 5-inch stump, so that those with shoulder amputation may feel that the artificial arm may be merely a more or less useless ornament.

One is often surprised at observing the ease with which a one-armed person does things which we with two do not do particularly well, such as bundle wrapping, or needlework. Without doubt it is possible to learn to do many things well with one hand, even the left, when patiently and persistently practised under intelligent direction. The great problem, therefore, is not the one-armed cripple but the cripple without arms, and it is this problem which is occupying the attention of the Surgeon-General's laboratory. It has gotten in touch with a number of "armless" men who are giving demonstrations of their ability to do things. They are also being subjected to various tests.

Treatment of the Stump.—After an amputation it is necessary that the stump have certain treatment before an artificial limb be fitted to it. After healing, the stump is bandaged snugly from the end to the next joint. This bandage should be taken off night and morning, the stump bathed with cold water, well massaged, and the bandage replaced snugly. If the skin is tender the stump should be bathed with alcohol or a solution of tannic acid. Usually about two weeks of such treatment is required to "harden" the stump, and prevent the accumulation of fat. Needless to say, the stump should always be exercised as much as possible.

The Surgeon-General's Office has authorized the publication of certain directions as to the fitting of artificial limbs[1] in which somewhat fuller directions are given for treatment of the stump than those above.

[1] The Relation Between the Amputation and the Fitting of the Artificial Limb. *Military Surgeon*, xlii, 154, February, 1918.

As soon as the wound is healed, and while the patient is still confined to bed, the stump is massaged, care being taken to avoid re-opening the wound. The stump is also carefully bandaged. For several minutes duration at four- or five-hour intervals the patient takes pressure exercises, the end of the stump being pressed upon a cushion or the edge of the bed, so that it will gradually become hardened or accustomed to the strains which will be put upon it. Next, active movements in all directions are practised, with the special object of keeping up the muscle strength. Later, to these same general movements resistance is added. Baths are carried on throughout the treatment.

According to E. Muirhead Little (op. cit.) few stumps are fit for appliances until six months after amputation.

Most wonderful æsthetic effects have been devised to overcome deformities of the face especially due to mutilation from wounds. Perhaps the greatest meed of praise should be given to the dentists who have achieved literally wonderful results, but it should not be forgotten that the surgeons have also done most ingenious plastic work. A Frenchman has invented a rubber composition to build up missing noses or fill out hollows, which is tinted flesh color and is applied like a paste. An artificial nose may be made of thin metal, flesh tinted, and held in position by spectacles.

An English sculptor, Derwent Wood, A. R. A., has developed this work to such an extent that he has been placed in charge of the Masks for Facial Disfigurements Department in the British General Service. By his painstaking carefulness and attention to detail, he has achieved splendid results, according to Mr. Ward Muir who has described the sculptor's work.[1] When possible the subject supplies a picture of himself before his injury. A cast is taken of his face in its present mutilated condition, which is built up to correspond with the portrait. By electrolysis a thin copper mask

[1] *Nineteenth Century Magazine*, October, 1917.

is made on this built up cast and is then fitted carefully to the deformed face. When this has been done, the mask is silver plated and then artistically tinted so that at a short distance it is impossible to distinguish between the mask and the skin of the wearer.

Another artist who has done interesting and valuable work is Miss Grace Gassette, an American who has resided in Paris for twenty years. She has shown great ingenuity in devising special splints and corrective appliances for use in the French Hospitals. Her work has been interestingly described in *The Modern Hospital*, Vol. ix, p. 92, August, 1917.

It should be distinctly understood that mention has been made of but few of the many prosthetic appliances which are known at the present time. While it might be well to discuss others and also the simpler forms of labor-saving devices, to do justice to the subject would require a large volume. Labor-saving devices are important and should be better known, for by their use it is probable that both physical and mental strain might be avoided. It is unfortunate that at present there is no governmental department which is in a position to give informaton regarding these matters. Possibly in the near future a department will be organized which will collect the knowledge, at present scattered and available only with more or less difficulty in the Patent Office, Surgeon-General's Office, American Museum of Safety, and among private individuals, so that it may be better disseminated.

CHAPTER XII

PHYSICAL EDUCATION

Right living, that is normal living, includes much more physical activity than exists in the life of most people. It is important that our patients be taught this fact and that they be instructed in those exercises which are best for them. It is also necessary that our nurses be taught how to give them.

The manner of such exercises may be greatly varied. Too frequently, perhaps, we feel that in calisthenics we have the one essential. It is true that such exercises are very important and a knowledge of them should be imparted to all of our pupil nurses. Frequently a sedentary worker can keep himself in a condition that is fairly "fit" by the regular use of a few calisthenic exercises even for a very small portion of his working day. The great disadvantage of these formal exercises is that they are apt to be uninteresting and especially so when carried out alone. The addition of music will do much to increase the interest, even to the solitary exerciser who works with a victrola, and will also do much to train in co-ordination. Marches and drills, when the numbers will permit, may be made quite attractive. Folk dancing should prove of value, despite the greater effort required to learn it, and if possible should be taught to the convalescent patients and to the nurses, if only as a diversion.

Eurythmic dancing is theoretically an ideal exercise, but can probably be used in only a small number of cases, so that it seems hardly worth while to attempt it with our patients or nurses. This is especially true since its exponents claim that four or five years are re-

quired to learn it. Probably this is necessary for those becoming professionals, but the beneficial effects may be derived without taking it up so seriously. It would be well to give a demonstration of this form of exercise, or at least a talk on the subject illustrated by pictures, if modesty deters the director or assistants from performing.

It frequently happens that an individual is introduced to physical exercises too strenuously and as a consequence acquires a distaste for them. I believe a period of five minutes is long enough until the subject's muscles begin to show the good effects. A better plan probably is to stop a movement just as soon as the muscles feel slight signs of fatigue and change to one using a different set.

Games of various sorts are usually much more interesting and the physical effect is better. The element of competition does much to add "spice" to physical exercises. The number of these is large, from baseball down to tag or prisoner's base. Indoor baseball or playground ball are excellent both for men or women. It is well to have some instruction given to both nurses and patients in whatever games are utilized in the institution for the patients' health or diversion. They will be done better if done understandingly. Even billiards or pool, or bagatelle may be looked upon as providing slight physical exercise. The following list may be suggestive:

Tag, Prisoner's base, Puss in corner,
Duck on Davy, Playground ball, Monkey ball,
Indoor baseball, Dodge ball,
Playground games (see M. Hofer for list and directions of a number),
Croquet, Dancing,
Tennis,
Cricket,
Baseball,
Beanbags.

It is very important that some instruction be given to the nurses regarding the general and local effects of all games or other forms of physical exercise. This is especially the case at present when active preparations are being made to care for those disabled by the great war.

Restoration of function can be better established by means of games which arouse the interest of the patient than by formal exercise. It is usually necessary to have a preparatory period of massage and passive movements before active movements can be attempted, but after this, games and work at some of the crafts will cause a more rapid restoration of function following a fracture or paralysis than if the former only is persisted in.

In an interesting sketch of Sir William Robertson, late Chief of the British Imperial General Staff at Whitehall, occurs the following: The physical training of the period in the British Army was ridiculously acrobatic. The man in the ranks would be put through all kinds of movements which were absolutely useless from the standpoint of actual battle. The strain seemed altogether absurd to Robertson. He ventured to point this out in an examination paper. "That exercise," retorted the medical officer in the course of a subsequent discussion with the non-coms, "strengthens the muscles needed for climbing." "Why not climb then?" asked Robertson. (*Current Opinion* for April, 1917, p. 247. The Soldier Who Rose from the Ranks to be the Brains of the British Army.)

The keen mind of General Robertson went directly to the root of the matter without wandering about in a pseudo-scientific morass before coming to a natural conclusion. Undoubtedly the work as planned by him was more *interesting* than when given as set exercises. Unfortunately, in the past the director of physical exer-
lost sight of this very important factor and has
not obtained the best results from his work.
one or more acquaintances who regularly
been members of a class of physical

education? Fortunately, the desirability of creating interest has been recognized and has been introduced in the form of competition. This is a cardinal principle in all playground games, and has also been extended to gymnasium work.

It is for this reason, the lack of interest, that I have always been prejudiced against Zander apparatus. While they are undoubtedly valuable when passive movement is required, their devotees carry their use too far, and at best the majority of the different forms are poor substitutes for something better. In the physical training or re-education of the crippled, however, it is frequently necessary to start the refunctioning of a limb, with the Zander or other apparatus. Numerous ingenious forms have been devised[1] but we frequently find many adaptations of things in common use, such as a bicycle, replacing these special forms of apparatus. Dr. R. Fortescue Fox (*l. c.*, p. 194) says: "When the disabled limb and the will are brought to the point of being able *to do something*, the last stage of treatment has been reached" (p. 195). "It will be found to be of great practical importance that the nature of an occupation should be precisely adjusted to the individual condition of each man's natural bent as well as his skill and experience in his previous occupation.

"Some common experiences at the Red Cross Physical Clinic in London may serve to illustrate the place that work may, and indeed, at the proper moment *must*, occupy in the process of treatment. An officer whose femur had been fractured came under treatment by baths, massage and mechanical exercises for stiffness of the knee and wasting of the associated extensor

[1] For a description of a number of these, see Physical Remedies for Disabled Soldiers, by R. Fortescue Fox, M. D., N. Y., 1917, Wm. Wood and Company. Mechanotherapy, by Dr. Armand Deltenre. *Special Bulletin*, Canadian Military Hospitals Commission, April, 1916, p. 55, et seq. . . . Reclaiming the Maimed, by R. Tait McKenzie, M. D. N. Y., 1918, Macmillan Co.

muscles. In two months the movement and muscular power were much increased, but the limit of benefit appeared to have been reached. When he returned home and began rough walking over his property in Scotland, the limb was still further improved. Another officer, after a course of treatment for a stiff knee, found great benefit from working with a scythe; and a third, recovering from immobility of the shoulder-joint following fracture near the head of the humerus, from daily sawing of logs of wood." The value of mental co-operation in physical re-education cannot be too strongly insisted upon and the work of Dr. W. J. M. A. Maloney, of Dr. H. S. Frenkel, and of Dr. Shepherd Ivory Franz gives ample proof of this.

In his paper on The Cure of Ataxia[1] Dr. W. J. M. A. Maloney enunciates some principles for the amelioration of tabetic ataxia which should prove of value in the treatment of all forms of paralysis and in the re-education of movement following fractures or other injuries. The first step is to eliminate fear and this is aided by the use of simple mechanical measures. A high shoe or boot with special ankle support and other features[2] has been found of value. The knees may also be given support by bandaging with light webbing.

At the treatments, which are given every other day and last from a half to one hour, the patient is made to lie down, blindfolded. "He is (pp. 1047 to 1048) enjoined to dismiss all thoughts of extraneous affairs, to allow his mind to tranquilize, and to attend strictly to what he is told. The room is maintained as quiet as possible to avoid distracting him. He is then ordered to relax the muscles first of his face, then of his neck, then of his trunk and then of his limbs. Each order is repeated

[1] *New York Medical Journal*, Vol. xcviii, p. 1045, November 29, 1913.

[2] **Maloney and Sorapure.** The Mechanical Support of the Foot in Locomotor Ataxia. *Medical Record*, Vol. lxxxv, p. 881,

and restated, first alone, and then linked with the preceding order. The whole process is conducted slowly and with suitable pauses. From these relaxation exercises, practised blindfolded, three results are attained; first, ineffective, often useless, and sometimes completely disconcerting muscular contractions which have been acquired in attempts to balance, are got rid of so that the co-ordinating exercises can be begun on an unconstrained musculature and not superimposed upon existing habit contractions. Secondly, active relaxation confers a great training in attending to muscular sense impressions. Thirdly, the patient becomes less fearful and more receptive because, in so far as fear is maintained by its motor expressions in his attitude, it is diminished. Patients report spontaneously that these blindfolded relaxation exercises greatly improve their sleeping power. They tend to sleep excessively. Arrears of sleep are made up and pains often disappear under the improved mental condition which now ensues.

"After general relaxation has been practised, attention is specially directed to one region, say the right lower limb. Relaxation of the ankle, knee, and hip muscles is then insisted upon. First each is separately considered, then reconsidered, and finally all are linked together so that as great a degree of muscular relaxation as possible is obtained in the chosen limb.

Movements.—"Next movements are begun. Passive flexion and extension of the ankle is first practised. The foot is placed in extreme flexion, and the patient is instructed to count slowly while the physician at a uniform rate moves the foot to a position of complete extension, pauses, and then returns the foot to complete flexion. The purpose of the passive movements is to teach the correct direction and extent of each movement. Next the patient lightly but steadily resists the passive movement. Then the movement is practised with the patient performing and the physician aiding and guiding. The physician's aid gradually lessens as improvement

occurs. And then the movement is executed by the patient alone. Finally, the movement is made against resistance. It is essential that the movement should always be completed by the return of the limb to the position from which the movement started. During every movement the patient counts rhythmically. The purpose of the counting is to educate the patient to move easily and uniformly, at a regular tempo. After the ankle, first the knee and then the hip of the same limb are educated. Besides flexion and extension, all the simple movements which can take place at the joint are practised. All exercises are done without shoes; artificial aids should not be employed during the exercises. In every case, first relaxation, next passive, then passive resisted, then passive combined with active, then active unaided, and finally active resisted movements are practised. When the ankle movements have been acquired then movement exercises are begun with knee movements; when knee movements have also been acquired then ankle and knee movements are repeated before each attempt at the hip movements; and so forth. The repetition, after relaxation exercises, of a movement which can be proficiently performed is a great aid in the learning of the next new movement.

"The limb movements which are practised in the recumbent posture may also, if possible, be practised, as occasion permits, in the sitting posture.

"Before any attempt is made to teach progression the trunk muscles must first be co-ordinated by relaxation and movement. This is usually easy for, the upper limbs being seldom ataxic, may be used to practise lateral and forward thrusts, elevation to the sitting and resumption of the recumbent posture, with aid and against resistance.

"The head and neck muscles are similarly treated. Their treatment is just as important as that of any other part. The position of the head largely governs the attitude of the body.

"Too great stress cannot be laid on this preliminary training in attitude. What may be called static co-ordination is a vital essential to correct progression. We know from the experiments of Vierordt and others that all local movements are but maximum expressions of a general muscular change. The general muscular change must not be neglected in favor of the local movement. Co-ordinate movement of the lower limbs can produce only a travesty of walking if the trunk and head are wabbly. The whole body must be taught to move harmoniously. The first essential of stability in walking is stability at rest.

"After the exercises in the recumbent and sitting postures have been completed the first attempt at progression is made. Kneecaps similar to those used by carpenters, but well padded, are tied on the knees and the patient is instructed in creeping. The change from the recumbent to the creeping posture does not unduly strain the patient's confidence in his powers of unaided blindfold progression. The creeping movements are conducted with the back as horizontal as possible; squatting must not be permitted. The tempo of the movement is again carefully regulated by counting. The direction is insured by means of a strip of carpet or linoleum upon which the creeping is performed.

"After creeping has been practised for some time, first, changing from the creeping posture to kneeling up, and then, rising from the sitting posture to the upright are attempted.

"In the erect kneeling posture progression is practised. Progression in the creeping and erect kneeling postures trains a person to move his body automatically with his lower limbs. This training is invaluable as an aid to walking. The dire dilemmas, which to move first, the body or the leg, how much to move the one without the other are obviated, and the transition from standing to walking occurs almost imperceptibly.

"Finally walking is taught. To maintain direction

during blindfold walking, strips of carpet or linoleum are again used. These strips should be arranged paralled with the walls of the room so that the patient may at first "feel" his way. As proficiency increases the patient passes from a 40-inch width of carpet or lineoleum to 30-, 20-, 15-, and even 10- and 5-inch widths."

Dr. Maloney believes that the removal of the ataxia is the best treatment of fear, but finds it valuable to explain to the patient the origin of his fears. Deep breathing has also been proved to aid in controlling fear.

Dr. Maloney found that the exercises which he gave to tabetics had the effect of lowering the blood pressure; and observed the same result in a case of nephritis. With Dr. Sorapure and others it was established that by the use of breathing and relaxing exercises it was possible to lower the blood pressure from over 200 to from 165 to 190, which in certain cases might be of considerable benefit. A perusal of their paper[1] is desirable, but the directions for giving these exercises are as follows:

"*Breathing Exercises.*—As we seldom use effort to expire, and often need effort to inspire, expiration, throughout life, is to a great extent a passive, mechanical art; whereas inspiration more often is consciously performed. So inspiration is usually better controlled than expiration, and much of the trouble in teaching breathing exercises lies in training patients to govern their expiration. We first instruct the patient to breathe deeply, and to pause at the end both of inspiration and of expiration. The breathing should be abdominal and should be done without jerking. One of the purposes of deep breathing is to distract the patient from obsessing thoughts and disturbing ideas, to focus his attention upon the exercises. But deep breathing quickly tires patients. Therefore, after about twelve full breaths, the patient

[1] The Relief of States of High Vascular, Muscular, and Mental Tension. *New York Medical Journal*, Vol. xclx, p. 1021, May 23, 1914.

is allowed to pass to breathing of moderate amplitude. Now all imagery is discouraged. The patient is asked to feel only the passage of the air through his nasal cavities, only the tactile sensations which arise from the movements of his abdominal wall against his clothes. While he is so practising, he is cautioned to stop any distracting thoughts as they arise, to keep his attention upon the sensations which accompany his breathing. After a few minutes of "medium" breathing, the patient is taught to breathe gently and quietly and to attend only to the accompanying sensations. A bag of sand or shot, or other heavy object, placed upon the abdomen, is useful to increase the muscular effort involved in breathing, so that breathing, during the exercise, may not easily lapse into an unconscious act. Instead of the sand bag, the physician's hand may be used.

"*Relaxation Exercises.*—To relax the muscles, passive movements in which the muscles are alternately lengthened and shortened, are employed. The scalp, forehead, cheek, and jaw muscles of the recumbent patient are passively moved by the physician, till wrinkling diminishes or disappears and muscular spasm is eliminated. Next, a shoulder is relaxed; then an arm. Each limb is dealt with separately. Each joint is passively moved until all trace of muscular tension vanishes. When the joints of a part are free from all muscular constraint, the part lies motionless or flaccid or falls limply from any unsupported position. After a part is relaxed those previously, and those newly relaxed should be briefly dealt with again, and in the order in which they were first relaxed. Thus, after relaxing the first limb, the physician turns again to the scalp, forehead, cheeks, and jaw; relaxes those, and then again the limb. This linking of parts previously, to parts newly relaxed is helpful in bringing the whole to a satisfactory state of relaxation.

"The relaxation of the neck and trunk muscles is best accomplished while the patient sits. The patient's

relaxed arms should then hang loosely down by his side, and his feet, crossed one over the other, should rest on their outer borders. The head should next be passively rotated in all directions, slowly and repeatedly. Then, by moving the supported trunk, the head is allowed to fall passively backward and forward, by its own weight. Finally, the head rests with the chin upon the chest, or hangs forward suspended by the ligamentum nuchæ.

"The trunk should be slowly bent backward and forward and from side to side, until sufficient loosening of the muscles is obtained to allow the trunk to gravitate without restraint in whatever direction it is inclined, unsupported.

"All movements should be first passively made by the physician, and then, where possible—limbs, head and trunk—passively induced by the action of gravity."

Dr. Franz and his associates, Dr. Mildred E. Schutz and Dr. Anita A. Wilson, undertook an investigation of "The Possibility of the Recovery of Motor Function in Long-standing Hemiplegia."[1] The results achieved have been very encouraging and show how much can be accomplished by intelligent effort. It is first determined just what muscles are affected, that is, what are the "secondary results." "The limb which at first was flaccid may become flexed (in the case of the arm) or overextended (as happens with the leg). In the arm segment, for example, the fingers are flexed, the wrist is flexed and pronated, there is flexion at the elbow, and the arm is adducted at the shoulder-joint. These constant flexions result in contractures, with limitations of the possible passive movements at the joints, and the contractures are a deformity." In treating these cases, "three general methods were employed. The first was that of massage and vibration. For the muscles which were strongly contracted effleurage, or stroking, was employed. The contracted muscles were stroked in

[1] A Preliminary Report. *Journal of the American Medical Association*, Vol. lxv, pp. 2150–2155, December 18, 1915.

order to reduce the hypertonicity, if possible. For the same reason, the hand was grasped and the arm shaken or vibrated until there had been a distinct loosening of the muscles. The extensors were also percussed (tapotement) to give them the benefit of the mechanical stimulation, and the nerves of the arm were also stimulated by deep pressure." Dr. Franz condemns the use of indiscriminate massage and limits its use to the contracted muscles.

All kinds of movements of the arms were also produced passively, when possible, special attention being given to extensions on account of the continued flexions. It was not found possible to pronate or supinate the arm [this experimental work was limited to the arm in this series] in some cases at first, and the amount of passive extension was limited during the early treatments. In some cases much pain was experienced in these procedures.

"The first two methods were employed in order to make possible the third, which was that of trying to get the patients to use voluntarily the extensor muscles in some simple activities. In some cases voluntary movements on the part of the patients could not be obtained for some weeks, but in all cases these were eventually obtained."

The "simple activities" included throwing a tennis ball into a waste basket set by a wall 6 feet away from the patient, opening the fingers after a ball had been placed in the hand, drawing lines with a pencil, the patient touching indicated squares on a "piano" board, and sewing. It is noteworthy that like Frenkel and Maloney, Dr. Franz enlists the will and interest of the patient.

The exercises as laid down by H. S. Frenkel[1] while open to the objection of being uninteresting must be considered a step in advance of passive movements. They are not entirely lacking in interest, however, as

[1] The Treatment of Tabetic Ataxia by Means of Systematic Exercise. Philadelphia, 1902, P. Blakiston's Son & Co.

it is always possible for the patient to do a little better, just as in golf we are always striving to beat Colonel Bogie.

For re-education in walking and other co-ordinated movements these exercises are excellent and may be given with benefit to many of our patients. Besides tabetics, undoubtedly the crippled learning to use artificial limbs, hysterics, and others can be helped by them. The apparatus required is slight, and many of the exercises can be often adapted to common implements in daily use. At least some slight instruction in these exercises should be given to nurses who are to care for nervous cases.

I agree, however, with Dr. Maloney, who condemns Frenkel's direction that the patient must follow each movement visually. Reasons against this are elaborated in Dr. Maloney's paper (The Cure of Ataxia) but it may be briefly stated that the fixation of attention on what should be an automatic movement controlled by kinæsthesia is both theoretically and practically wrong.

Interest in all physical exercises has been stimulated by the better physical health enjoyed by our younger men as a result of the exercises which have been forced upon them as a part of their military training, and Dr. Wilfred Grenfell has recorded how the "wasters" of the London clubs have gained physically, mentally and morally.[1] The probability of a large number of wounded and crippled being returned to this country has also caused a number of individuals to consider how such may be helped. Physical well being is essential to the crippled who are usually disinclined to take any exercise for a varying time after they have become convalescent.

Regarding the physical measures used in caring for the wounded, probably Major R. Tait McKenzie, Professor of Physical Education at the University of Pennsylvania, deserves more credit for the excellent measures adopted

[1] Red Cross and R. A. M. C. *Atlantic Monthly*, Vol. cxviii, p.

by the British than any other one man. He modestly disclaims this and insists that the credit is undeserved. He is the author of several books[1] and articles. Among the latter is one entitled "The Treatment of Nerve, Muscle, and Joint Injuries in Soldiers by Physical Means,[2] from which the following is copied:

"GYMNASTICS"

"Gymnastics should be considered as part of the treatment in most cases whether the recovery is complete or not, a contracted finger or a stiff knee should not prevent the patient from doing most of the movements in a gymnastic table and the general exercise and discipline contributes to his cure. The two tables of Swedish remedial exercises, designed and already in use for convalescents, are arranged with no jerky or violent movements at first so as to avoid the possibility of injury from overstrain. As the patient improves, he may be given simple dancing steps to music and so progress to tag and other gymnastic games. The formal gymnastic tables are largely for discipline, accuracy, and control and should occupy but a small part of the hour, the rest being given over to games with medicine ball and basket ball, or such sports as handball, bowling or quoits. In this way discipline is combined with treatment and recreation and the man is prevented from forming those habits of idleness that unfit so many hospital patients for civil life after their discharge.

OCCUPATIONAL THERAPY

"As soon as possible, men should be set at some occupation in which they will use the affected arm or leg, not consciously, but to accomplish some definite task.

[1] Exercise in Education and Medicine. Philadelphia, W. B. Saunders Company. Reclaiming the Maimed. N. Y., Macmillan Co.

[2] *Canadian Medical Association Journal*, December, 1917.

Driving a nail, pushing a saw, or handling a spade will supplement and soon replace the more accurate but less interesting work of the treatment room. The clumsy fingers become nimble, in typewriting, weaving, splicing or modeling and the practice of these trades must be regarded as important parts of one general and progressive system of treatment.

"The success of physical means in the treatment in these conditions depends on well-trained operators.

"In Canada there are now two schools turning out graduates trained in the use of electricity, hydro-therapy, radiant heat, massage and corrective exercises, muscular and educational, and I trust this will be followed speedily by a course for the medical officers who will be put in charge of this important department of treatment. Such a course should consist of:

"1. Orthopædics, to include the use of splints for all orthopædic conditions, the construction of shoes to correct foot deformities, the demonstration of nerve suture and tendon transplantation, the after treatment of stumps and the fitting of artificial limbs.

"2. Electricity, to include lectures and demonstrations in the use of galvanism, faradism, diathermy, and actual practical instruction in muscle testing.

"3. Hydro-therapy, to include demonstrations and practice in the giving of the douche and whirlpool bath, and the sedative bath.

"4. Thermo-therapy, to include demonstrations and practice in the use of the lamp and cabinet bath.

"5. Massage, to consist of demonstrations and personal practice in each form of manipulation including passive movement.

"6. Re-education, to consist of demonstrations and practice in the use of each of the appliances for re-education provided by the Military Hospitals Commission.

"7. Gymnastics, to include practice in going through two tables of Swedish remedial exercises for convalescent soldiers, dancing steps and gymnastic games.

"8. Observation and lectures on occupational therapy.

"Such a course would prevent medical officers from being put in the false position in which they so often find themselves, of having to direct treatment with which they are not familiar."

Dr. McKenzie states that physical therapy applies to the following conditions:

"1. Injury to peripheral nerves, all the way from the bruising of a nerve trunk to its destruction, and restoration by surgical means.

"2. Scar tissue, either in preparation for, or after operation.

"3. Old septic wounds, long since healed, are frequently painful, and a focus of infection may be discovered by massage.

"4. In all post-operative conditions the cure must be completed by physical means. It is not enough to break down an adhesion or restore a joint to potential usefulness. Its nutrition must be improved, and the patient must be taught to use it.

"5. Functional neuroses, which take the form of palsies, loss of sight, speech or hearing, areas of anæsthesis, or hyperæsthesis, show many marvelous cures by physical means.

"6. The conditions variously grouped under the name "shell shock" which vary all the way from minute hæmorrhages into the brain substances, caused by concussion, to fear and intolerable weariness must be treated by this means. When the soldier in the trenches begins to move his head rhythmically, to twitch his arm, or clutch at the sound of a shell, the regimental surgeon, if he is wise, sends him back to the rest camp for a week or two. If he is kept until the inevitable smash comes, his recovery will be a matter of months, at best, and he is usually put out of commission permanently. Tremors coarse and fine, up to the point of a general convulsive seizure, rhythmic movements, increasing when the man is spoken to, and calming down when he is left

alone are characteristic. Many of these men are martial misfits, never built for the enormous stress of modern warfare, and rapidly go to pieces under it. They usually present a history of nervousness, frequently with enlarged thyroid, rapid pulse and prominent eyes, and all such cases call for rest and sedative treatment, by the continuous bath at skin temperature (94 degrees), hours of rest in bed daily, and the substitution of gentle massage and electricity for active movement at first, with a gradual increase of exercise, beginning with a slow walk and ending with gymnastic games and vocational training.

"7. The "soldier's heart" is but a symptom of overstrain. The rapid pulse and breathlessness, the enlarged thyroid, all show the nervous origin of the conditions now known familiarly to medical officers as D.A.H. (*i.e.*, Disordered action of the heart). The faradic or high-frequency current, the sedative bath, gentle massage and rest quickly reduce a rapid pulse rate and allow him to bear without danger, an increasing load in the form of gymnastic exercise, walking, and manual labor.

"8. Debilities, whether due to typhoid, dysentery, or exhaustion are built up again and made ready for service by graded exercises of effort, like light gymnastics, and of endurance, like walking, until they can stand the amount of work to which they were formerly accustomed."

In this paper, Dr. Mackenzie does not discuss the place of physical exercises in the "treatment of sprains and after fractures, in rheumatism and gout, in flat-foot and other postural defects."

Dr. McKenzie has also contributed a chapter on Massage, Passive Movement, Mechanical Treatment and Exercise, to Dr. R. Fortescue Fox's excellent little book entitled Physical Remedies for Disabled Soldiers (New York, 1917, William Wood and Company). This book is divided into three parts. Part I on Hydrological R[illegible] and the [illegible]tions for their Use, describes

remedial baths and the indications for their use in surgical fever, nervous, cardiavascular, rheumatic, digestive and tubercular cases. Part II on Mechanical and Electrical Remedies treats of forms of mechanical treatment, the chapter by Major McKenzie, and chapters on the Administration of Massage by Dr. James B. Mennell, and Electricity and Radiation, by Dr. Francis Hernaman-Johnson. Part III on the Provision for Physical Remedies treats of Physical Remedies in the Hospital, the Physical Clinic, Physical Remedies, Re-education and Work, Physical Remedies at the British Spas, and British Marine Resorts and Climates. The book is most valuable for anyone taking up physical education.

While it is impossible to more than "point the way" in a brief chapter, the reader should bear in mind that there are many works of value both in the form of books and articles. One of the latter seems especially noteworthy. There are many people whose feet are deformed due to ill-fitting shoes. Personally, I hold the shoemaker responsible for this as we buy what he sells us or makes for us. The shoemaker blames Dame Fashion for his nefarious conduct forgetting that he sits up nights to devise new styles. At present, however, we are more concerned with the consequences than with placing any blame. Our deformed feet frequently cause a weakening and bring about the condition know as flat-foot, as well as other changes. Once acquired it is difficult to get rid of, but is best helped by exercises which have been formulated by Major William W. Reno, U. S. A.[1]

Briefly stated the exercises are as follows. It naturally adds interest as well as endorsement when we know that these are used in United States Training Camps:

FEET EXERCISES

EXERCISE I. Stand erect, with only toes projecting beyond edge of chair, board or some convenient ledge or

[1] John S. Gregory. The Feet of the Fighting Men. *The World's Work*, Vol. xxxiii, p. 303, January, 1917.

depression. Bend toes downward in gripping movement. Ten to thirty times.

EXERCISE II. Move forward a little until half the foot projects over edge of board, or depression—go through the same movement.

EXERCISE III. Entire foot rests on a flat surface—without raising body of foot, curl the toes back ten to thirty times.

EXERCISE IV. This same position, separate all the toes ten to twenty times.

EXERCISE V. Turn toes slightly in, and heels out, weight of body thrown on outer edge of foot, while the toes are bent downward and curled under the foot—or with weight of body on the heels the anterior part of the entire foot is lifted as high as possible from the ground.

Additional exercises.

Bend foot downward from ankle—ten times.

Upward from ankle, ten times.

Rotary movement of foot on ankle.

It must be remembered, also, that it will frequently be necessary to give special instruction, for example, to teach a right-handed man to become left-handed because he has lost his right hand or arm. At special training centers it has been found well to have persons similarly crippled who have become proficient in using the remaining limb to give instruction to those who have not yet learned this adaptation. At the Ecole Professionelle de Blesses at Montpelier, M. Tamenne, a Belgian refugee who lost his right forearm when he was sixteen and who has so re-educated his left hand that he is almost unconscious of the loss, has been teaching disabled man how to use their left hands. He has formulated some specific directions for writing which should undoubtedly be found useful.[1]

[1] *The Lancet*, April 7, 1917, p. 553. Abstract in *Journal of the American Medical Association*, Vol. lxviii, p. 1562, May 26, 1917, *Hospital*, Vol. viii, p. 438, June, 1917.

Another writer has suggested a method by means of which armless men may be taught to write with the knee.[1] This impresses me as being cumbersome and a rather useless proceeding. If the armless patient cannot be fitted with one of the excellent artificial arms which are on the market, he can be taught to write with the penholder held between the teeth, which is a simpler and more common method.

It should be constantly kept in mind that the benefit from physical exercises is much greater if they can be carried out in the open, where there is an abundance of fresh air.

[1] Blachly, Dr. Arthur T. Apparatus for Writing with the Knee. *Journal of the American Medical Association*, Vol. lxviii, p. 1696, June 9, 1917.

CHAPTER XIII

OCCUPATIONS FOR THE FEEBLEMINDED

I must confess to a feeling of diffidence in taking up this subject as my experience with the feebleminded is rather limited. As I have been particularly requested to include such a chapter and as there is apparently but one special work upon the subject,[1] I have made a compilation from more competent authorities, in order that those needing it may have references, at least, in a convenient form.

According to Dr. George W. Jacoby,[2] "Edmond Holmes in his book, "What Is and What Might Be," differentiates six natural impulses or instincts, as follows:

"1. The child's instinctive desire to enter into communion with the persons about it, to talk to them, to tell them what it has done, seen, felt, thought, and to hear what they have to tell it. This he calls the *communicative instinct.*

"2. The tendency of the child to play the rôle of hero, fairy, prince, adventurer, giant, or dwarf. This he calls the *dramatic instinct.*

"3. The desire of the child to give visible expression, through drawing, painting or plastic imitation, to the pictures which fill its imagination—the *artistic instinct.*

"4. The impulse of the child to reproduce melodies by singing and to execute their corresponding rhythmical movements by dancing—the *musical instinct.*

"5. The desire of the child to know the why and where-

[1] Bickmore, A. Industries for the Feebleminded and Imbecile, London, Adlard & Son, 1913.

[2] P. 235, Child Training as an Exact Science. Funk & Wagnalls Co., 1914.

fore, the reason and purpose, of things—the *inquisitive instinct.*

"6. The impulse of the child to pull apart things in order to reconstruct them—the *constructive instinct.*

"Of these, Holmes classes the first two as sympathetic instincts, the next two as æsthetic instincts, and the last two as scientific instincts. Upon the basis of these natural impulses is built the mental development of the child."

Probably every one in adult life knows of instances where the repression of such natural instincts has caused a failure of adaptation, for example, a youth with musical ability and instincts has been forced into a commercial career with consequent unhappiness and lack of success. It is a wise parent or teacher who can recognize the child's capabilities and weaknesses and so order his training that the first is fostered and the latter overcome, at least partially.

So also is the occupational teacher wise who can present to the patient the occupation which will appeal most strongly to his natural instincts.

It may be admitted without argument that many crafts will appeal to more than one instinct. For example, making a basket may appeal to one's artistic as well as constructive instincts.

In regard to vocational training of the feebleminded, Dr. Jacoby says: "The attempt should at least be made to teach them some vocation. Simultaneously with other instruction a certain training in mechanical dexterity should be undertaken. In the beginning this work may be restricted to the performance of household work. In conformity with their greater bodily strength, the boys should be urged to do the heavier work, such as carrying coal, chopping wood, etc., while the girls should be induced to knit, sew, clean the house, cook, wash, etc. Later the children should, if possible, be employed in the field and garden, as well as in the workshop. The feebleminded of higher grade may be

trained as shoemakers, tailors, locksmiths, carpenters, or bookbinders, those of lower grade as basket or carpet weavers, rope and broom makers. For the lower grade of educable idiots pursuits as simple and unvarying as possible should be selected, such as stable cleaning, wood chopping and shoveling in the field and garden, because these occupations, being more easily remembered, sooner become automatic, and because they are markedly advantageous from the point of view of bodily hygiene."

As in all forms of occupational therapy which are especially for mental training, the awakening of the attention and interest is one of the most important and one of the most difficult things about the work.

Shuttleworth and Potts'[1] 4th edition, devotes a brief chapter to Industrial Training and Recreation. They recommend kindergarten work as a preparation for handicraft, as paper weaving paves the way for stocking darning. This work also "trains the fingers, and through them the intelligence," develops continuity of attention and stimulates further effort by the production of a tangible result. It has been frequently noted that the feebleminded learns more with his hands than with his head. Outdoor work is especially recommended. Among the occupations given are nature study, the making of woolen and cocoanut fiber mats, cloth and cane weaving, simple brush and basket making, straw plaiting, macramé, wood carving, knitting, crocheting, printing, bookbinding, envelope and paper-bag making, cardboard box making, tinware and metal plate work, tailoring, shoe making, wood carving, lace making, and needlework.

Dr. Martin W. Barr[2] gives interesting details of how patients may be given manual training and occupation.

[1] Deficient Children. Philadelphia, 1916, P. Blakiston's Son & Co.

[2] Their History, Treatment and Training.

A low-grade imbecile was extremely troublesome and destructive to his clothing. He was first taught to tear cloth into strips and arrange them in orderly piles. Then to ravel them into threads. Next to knot these threads together, a task requiring months to learn. The long string which resulted was then wound into a ball, which the teacher covered. The next step was knitting, which was finally learned after months of effort. As a result, an unruly, troublesome boy had been transformed into one who delighted in knitting caps for others.

It is impossible to reproduce here the excellent ideas and descriptions given by Dr. Barr without too extensive quotations and a perusal of his book is recommended. It may be stated, however, that sloyd is recommended for its progressiveness, and the general use of wood tools for the mental stimulus they will give the child. Paper or cardboard construction work may be used when more convenient than wood. Clay modeling, drawing and painting, are also of value for the mental development of the child and assist him to do better work later on in such trades as shoe making, tailoring, carpentry, house painting, basketry or pottery; or in embroidery, carving or illustrating.

Dr. William W. Ireland says[1] that "it is of great importance to teach imbeciles to work. They are naturally indolent, and work must be made a habit before it becomes agreeable. Once they have fairly learned it, it may fill up many dreary hours in their life, and may lead to their making their bread, or being very helpful to others. The trades generally taught in training schools are mat making, brush making, shoe making, mattress making, cane bottom and basket making, carpentry, tailoring, and the cultivation of the ground." "As the pupils are of different strengths, capacities, and powers of standing exposure, a variety of employments is needed."

[1] Mental Affections of Children, Idiocy, Imbecility and Insanity. 1898, Philadelphia, P. Blakiston's Son & Co.

Jones[1] gives the following list of occupations for the feebleminded: farm work, dromedary, basketry, chair caning, weaving rugs, hammocks and towels, making rag carpets, making mattresses, scrubbing wood, making veils, shoe making, painting, plumbing, printing, sewing, knitting, embroidering, tailoring, laundry, general housework and cooking, and possibly manicuring.

Always when prescribing occupation, the individual's needs and idiosyncrasies must be kept in mind. This holds true for the feebleminded, as well as the neurasthenic, and may require more patience to apply. As a rule the economic value of the occupation is considered more seriously by the former than the latter, but therapeutic importance should be paramount. In this way the most satisfactory results will be obtained.

While all grades of the feebleminded undoubtedly can be better educated in schools or institutions conducted for that purpose, there are frequently sufficient reasons why a child should not be sent to one. For example, he may be too young. The mother, or governess, may be able to aid the mental development in many ways. If, on account of the expense, it is not possible to secure the services of a trained teacher, there is an excellent book which may be used as a basis for this work.[2]

It is desirable, however, that all instruction and exercises that are carried out by the untrained should be under the direction of some competent authority.

As a rule, teaching form and color is facilitated by the use of objects larger than would be ordinarily used for the same purpose with normal children.

[1] *Occupations for Feebleminded. Modern Hospital*, September, 1917.

[2] Wrightson, Hilda A. Games and exercise for Mental Defectives. Cambridge, 1916, Caustic-Claflin Co.

CHAPTER XIV

OCCUPATIONAL THERAPY FOR THE BLIND

A number of years ago I had occasion to make a study[1] of the emotional reaction in persons who had become blind in adult life. I found that there was usually a depression which began as soon as the patient realized that blindness was inevitable. It was at times preceded by a period of doubt during which the patient could not believe that the specialist's prognosis was correct, and that blindness was really approaching During this period the patient would go from physician to physician, or would try one quack remedy after another. This phase was usually seen in persons of the lower social and educational levels. The depressed period was of variable duration, seldom lasting over a year, and disappeared as soon as the patient realized that he and those dependent upon him would be taken care of by their own or his efforts.

As a rule the relatives caring for the patient were responsible for the prolongation of the depression by showing ill-judged sympathy and coddling, not insisting that he learn to exercise personal care, and frequently keeping him housed in close, ill-ventilated rooms with little or no physical exercise. After the patient had been taught to overcome his handicap, and had become capable of earning at least a part of his living expenses, there was an emotional change and there followed a condition of cheerfulness which was frequently greater than the individual's normal.

While I have never had the privilege of investigating

[1] Mental State of the Blind. *American Journal of Insanity*, Vol. lxv, p. 103, July, 1908.

those blind from birth I am of the opinion that no such constant reaction as the above can be observed, for those born blind are frequently subnormal, due to the same cause as the blindness.

The statement has recently been made that "Their (the blind) attitude is not an attitude of happiness but rather an attitude of resignation. They are really the Ishmaelites of this century, made so by our economic system. They are unable to procure and maintain their own homes; they have been driven out of the community life; they are not permitted to be a part in any industry. The blind have for centuries asked for a chance, and (the speaker) is right when he says they have been extended charity. This is not due to any premeditated purpose on the part of society; it is one of the mistakes of our economic system." I believe that this opinion of the mental attitude of the blind is a mistaken one and that we will find very few persons who are familiar with them after they have adjusted themselves to their condition who will agree with it. As I have previously said, blindness is usually followed by a period of depression which in time is replaced by a condition of cheerfulness above the individual's normal. Naturally in the transition period we would expect to find an "attitude of resignation." Possibly the patients were not observed beyond this stage.

The evils of the lack of occupation show more plainly perhaps in the blind than in any other group except the insane. The blind man who has not been trained in some occupation is very apt to develop dissipated habits as a relief from idleness. As a consequence he causes trouble and becomes a nuisance or even menace to the community.

Occupational therapy for the blind may be said to begin with the instruction given the patient so that he may exercise proper personal care. The coddling to which he has been subjected, and the self-pity which is [illegible] any one of us suffers a physical

or mental misfortune, together operate to diminish the patient's self-confidence and self-reliance.

It is easy to understand that a person who is encouraged in the belief that he is helpless may soon have this idea firmly fixed in his own consciousness, and especially so when he is suffering from a physical infirmity which requires such a radical re-adjustment of his methods of living as blindness entails. The first step therefore is to get rid of this idea of helplessness. The statements of the teacher that he can do something for himself will probably be received with incredulity at first, but its repetition will in time bring about a condition in which the patient is somewhat receptive and can be persuaded to attempt simple tasks of personal care or to do something for his own amusement. He may be taught to comb and brush his hair or to recognize the prickings on a pack of playing cards which have been marked in order that he may play solitaire and so pass the waiting hours. If a woman, a beginning may also be made by teaching her to arrange her hair.

Immediately upon finding that he can do something for himself the adult blind patient becomes more hopeful and ambitious to learn other things so that he may become still more self-reliant. In a short time it may be possible for him to be taught to take entire charge of his person, even to shaving himself. Frequently on his own initiative he will do small tasks, thus further increasing his self-confidence. At this early stage it is extremely important to give all the praise and encouragement that is possible.

Early in his training the patient should be taught to find his way about his dwelling and its immediate environs unassisted. Although I have had almost daily observation for eight years of the young blind woman who operates our telephone switchboard and who does the work which is ordinarily performed by those at information desks, I have never ceased to marvel at the way she runs across the hall and through a doorway without

mishap. Many of the adult blind have a great deal of feeling against the use of a cane, or antenna as it is frequently called. It is usually possible for the blind to entirely dispense with an antenna when in familiar surroundings but it is generally conceded that mishaps may be avoided if one is carried on the street, or in fact, any place other than the dwelling or work place habitually used by the blind person. This view has recently received strong corroboration from Philip E. Layton.[1] Dr. Javal in his book *Entre Aveugles*[2] also advocated the use of antennæ. This, by the way, is an excellent work to read to the person with failing eyesight, or by those who care for such, as it abounds with many practical directions. Dr. Emile Javal was a famous French oculist who lost his eyesight suddenly when sixty-two years old, after which he wrote the above. In the paper previously mentioned I made a quotation from Dr. Javal's chapter entitled "Psychology of the Blind." While throwing light upon the mental state of those who become blind in adult life it also is a strong endorsement of the value of occupation. The quotation follows: "Among men who are free from material anxieties, those who have never taken thought save of their pleasures and of their own affairs are the most unhappy when they lose their sight. By a sort of distributive justice, those, on the contrary, who have set before them as the chief aim of life to contribute to the extent of their power to the general progress, find resources in themselves; every one, whatever his social position and his intellectual faculties may be, can always find satisfaction in contributing to the happiness of another.

"Men of science occupy a privileged position; they

[1] The Inability to Travel Alone One of the Chief Causes of Failure Among the Blind. *Outlook for the Blind*, Vol. xi, p. 68, October, 1917.

[2] On Becoming Blind, Advice for the Use of Persons Losing Their Sight. Translated by C. E. Edson, New York, 1905, Macmillan and Co.

have, in fact, a whole fund of acquired knowledge which they can make use of. So long as they can still bring their stone, however small it may be, to the building of civilization and progress, they feel that they live; and whatever be the wounds received, they are not *hors de combat*—the inequality of arms only increases their ardor. More happy still if, their work having been of use to some one, they can repeat with serenity the words of Ecclesiastes, 'My heart rejoiced in all my labor; and this was my portion of all my labor.'"

Having made a start there is usually little difficulty in stimulating the patient to take up other occupations. It is important that he be taught one of the systems of reading raised type by touch. There are a number of these, the Braille, Moon, and New York Point being the principal ones. It has been recently proved by Mr. Walter G. Holmes that the New York Point is the best for several reasons, the most important is that it occupies less space than the other systems, hence is the most economical. A movement has been started to combine the smaller characters of the Braille and New York Point to form a Universal Alphabet.

The marked cards to which reference has been made will often act as a stimulus for the patient to take up the study of reading by touch. This will serve to pass many hours which would otherwise be dull and depressing. The majority of public libraries have books for the blind and the United States Post Office Department has made arrangements for the free transmission of such reading matter through the mails. A special magazine called *The Matilda Ziegler Magazine for the Blind* is published monthly in New York and is distributed freely.[1] It deals with current events and with this magazine the blind who cannot have a reader to read them the daily paper can keep up with what is going on in the world.

At the same time that instruction in reading is being

[1] For information address the Matilda Ziegler Publishing Company for the Blind, 250 West 54th St., New York, N. Y.

given the patient should be taught some forms of manual work. It may be possible for him to adapt himself to his former trade, such as shoe making, in which case the problem of keeping the patient occupied and contented, and also earning a part of his upkeep, is soon solved. It is more difficult when the patient is only capable of doing manual work, yet is unable to follow the form he pursued before he became blind by reason of danger or some other cause.

Some months ago I was told by an ophthalmologist that it was folly to teach the blind manual trades as they should be taught to work with their brains, and he gave instances of blind men whom he knew had amassed large fortunes. This was evidently a statement made without much thought, for every one knows that many of the blind lack sufficient intelligence to support themselves by mental work as do many who are physically perfect.

He also condemned broom making as an occupation for the blind although it has for a number of years been regarded as especially fitted for blind men. In fact, there is a strong sentiment that it be reserved for them. Many persons will not purchase a broom unless it has been made by a blind worker. As equipment and apparatus is necessary their manufacture is usually carried on in workshops for the blind. It is doubtful, however, if there are a sufficient number of blind broom makers to adequately supply our needs so that the probability of this becoming a restricted occupation is quite remote.

It is also doubtful if it is possible to restrict the blind to certain occupations, for while a number are obviously unsuitable, such as painting, we every now and then hear of a blind man or woman doing something which we had heretofore thought impossible for one so handicapped to accomplish. Gardening and poultry raising are being taught the blind English soldiers. It should
l that in the last the man's wife is also given a
tion so that she may assist him. Blind

men are also being taught to become stenographers, taking their notes by means of a typewriter especially devised for their use, the Braille typewriter. The touch system is used on the ordinary typewriter by all first-class operators to eliminate fatigue and increase efficiency, so that we are accustomed to this method and consequently its use by the blind causes slight wonder. The handwriting of the blind deteriorates quite rapidly so that all are taught the use of the machine and in many schools the pupils are provided with one on their graduation. It is very easy for the blind man or woman to become an expert telephone operator where a "drop" switchboard is used. That is, where a metal shutter drops down when a call is made instead of a light showing. Weaving on Swedish looms, needlework, basketry and many other crafts are successfully carried on by blind women.

Netting is frequently taught to blind men and is excellent as an avocation. For one to whom reading is difficult or distasteful it gives opportunity for a mild stereotyped physical exercise and employment of the mind. By making fishing nets, tennis nets, laundry washer and other bags it may be made a vocation. The hammocks which are netted are more expensive and less comfortable than those woven by machinery and I believe that their manufacture should not be encouraged. An accomplished netter should know how to make one should he receive an order, but he should not be encouraged to believe that there is a demand for them.

Basketry is one of the best manual occupations for the blind. Either as a vocation or avocation it has great value. A beginning should be made with reed if possible, although trade restrictions due to war are apparently making this a rare material. The paper substitutes for it are quite unsatisfactory. When sufficient manual dexterity has been acquired and the patient can weave bases, sides, borders, and put on handles he should be taught the preparation and use of willow. There is always a demand for baskets and a blind basket maker

will have no difficulty in securing employment if there is a factory in his town. If there is not and he must carry on his trade at home, some arrangement should be made so that he can market his products. From making baskets to making willow furniture is a short step, and while fashions change, it seems improbable that we will give up this beautiful and convenient form for many years. On account of changing fashions and demands it is necessary that the individual worker be kept informed of new designs and forms so that his products may be marketable.

In every phase of life, the will to do brings about the accomplishment of anything. The problem, therefore, is to stimulate the will of the patient so that he makes the effort to accomplish the work he has chosen. It is difficult to be sure that we always guide him aright and suggest an occupation for which he is best fitted, therefore, the selection of an occupation should be left largely to his own initiative. As yet the whole question of suitable occupations has not been solved. Recently a large electrical manufacturing company has had a number of blind men and women taught to wind armatures, thus opening a new vocation to them. Whether it is one for which they are especially fitted it is impossible to say. It will be found that the blind who attain eminence usually do so in some sphere which they have chosen for themselves. They have had the will to succeed, frequently in some way which impresses us as being unique for one so handicapped. Notable instances are Henry Fawcett (1833–1884) who for many years was Postmaster-General of Great Britain and Professor of Political Economy at Cambridge; William H. Prescott (1796–1859), the American historian; John Milton (1608–1674), the poet; François Huber (1750–1831), a Swiss naturalist who was noted for his study of bees; Senator Gore of recent memory; and many others. A number have done much to improve the condition of the blind, such as Louis Braille and Dr. William Moon,

the inventors of the types which bear their names; Dr. T. R. Armitage and Elizabeth Gilbert, who founded associations for aiding the English blind; and W. H. Churchman and H. L. Hall, who did much in this country. Many have been musicians, theologians, writers, lawyers, mathematicians, or prominent in business. In every instance it was the will to succeed and the determination to overcome difficulties which brought success. Probably each one of us knows of individuals, who, though handicapped in some way, have made a success in some chosen vocation because they have had the will and the determination to succeed in it.

It is extremely important with the blind, as well as with the crippled, that they be taught how to amuse themselves and satisfy the play impulse, in part at least. Card games, checkers, chess and a number of others are easily available. Music is often enjoyed and many of the blind become experts with the aid of a reader or secretary. But none of these entirely fill the need for recreation because there is little physical exercise or movement connected with them. The blind are especially prone to avoid physical exercises, although I believe that the majority of us have the same fault. They should be taught simple calisthenics which can be carried on alone after rising or before retiring Regular outdoor exercise should also be taken each day even though this be limited to walking. If it is impossible for the blind man or woman to have a companion to guide them in their daily walk it is usually possible to find some familiar, even though restricted, area where they can walk to and fro for a certain period of time. The blind man or woman living in the country usually has better opportunity for outdoor exercise than the city dweller. Chopping or sawing wood, husking corn, and similar tasks have a greater value as light physical exercises because they are usually carried on out of doors or in an airy place.

Dancing is an excellent exercise and round dances

with a guiding partner may be a great pleasure to the blind. Dr. Javal found benefit and enjoyment in propelling a tandem tricycle with an attendant. Other forms of exercise will be suggested by the tastes and inclinations of individual patients. We are usually surprised when we first learn that blind boys and girls take part in athletic contests and games. While older patients may not care for such strenuous forms, at least a small part of the day should be given up to some active outdoor exercise.

It is important that instruction of the blind should only be undertaken by those who have been properly trained. Unless this is done mistakes may be made which will prove discouraging to the pupil. It is possible, however, for any one with intelligence and an active interest to co-operate in such instructions and materially assist the patient.

CHAPTER XV

OCCUPATIONAL THERAPY AND SOCIAL SERVICE

Elsewhere[1] I have detailed a plan for the Organization of the Re-educational Facilities of a Community which is here reproduced:

A Plan for the Organizaiion of the Re-educational Facilities of a Community.—By William Rush Dunton, Jr., M.D.

The plan which is outlined in this paper is at present being worked out in Baltimore and vicinity. It is believed that it gives a splendid opportunity for the economic improvement of a community at the present time and will also provide an organization which can adequately handle the problem of the returned crippled soldier.

The experience of Canada affords many lessons of which our governmental departments apparently have been slow to take advantage. It must, however, be remembered that there is a great deal to be done in getting our soldiers into active service, and it is but natural to permit such problems as the returned soldier to wait until the more pressing ones are solved. It is indeed a question whether the brunt of caring for the returned soldier is not more of a community problem than a governmental one, but even so, until the soldier is discharged from service he is in charge of the War Department and the community can do nothing without its sanction. It is believed, however, that some arrangement can be made by which the government and the community can work together.

While the Canadian Military Hospitals Commission

[1] Proceedings of First Annual Meeting of the National Society for the Promotion of Occupational Therapy.

has done much they have been unable alone to solve the problem of placing the cripple who has been trained. It has been necessary to enlist the aid and sympathy of the general public. The French have met the same difficulties and I feel that our society can do its bit by aiding the various social agencies to re-educate and rehabilitate some of their cripples and pensioners and restore them to a place in the community. As an example I might instance the splendid work which has been done at the Chicago Experiment Station by Mrs. Slagle and her assistants. Here already is the nucleus for such work, although the re-educational measures have been limited to mental invalids. With the practice gained in such work the social agencies will be prepared to handle the larger numbers who will inevitably be brought home, and we have already heard of the possibility of the invalids of other nations being brought to this country.

It is a comparatively simple matter to train individuals in a craft or occupation. Suppose a carpenter has had both legs crushed necessitating amputation. With his knowledge of wood working tools about all we have to do is to furnish him with designs and materials and he is able to make attractive bird houses. But of what use is it unless he is also provided with some means of disposing of them. Then too, fashions in bird houses change and a small community will soon be well supplied, so that it becomes necessary to start all over again and give him something else to make. Possibly we can suggest something for which there is a steady demand, or can find him a position in a manufactory where he can sit before a bench and nail covers on small wooden boxes. To do the latter, the employer must be convinced that a legless man can do this sort of work satisfactorily, or if necessary to provide an untrained helper to place the boxes within reach, the employer and our patient must reach an amicable arrangement to share this extra charge. It seems to me, therefore, that the first thing to be done is to:

1. *Canvass Employers to Ascertain if They Will Employ Cripp'es and Part Time Workers.*—On account of overhead charges (rent, heat, light, etc.) it is but natural for employers to refuse to employ part time workers, but it is conceivable that they would be willing to employ several shifts of such workers and so reduce the per capita overhead charges. It is also conceivable that our patients can be induced to agree to such an arrangement.

The Canadian Hospitals Commission has done excellent work in training the crippled soldiers in new vocations or modifications of their old ones, so that individuals have been known to gain a higher wage than when unhandicapped. For this purpose the Commission has a large staff of vocational teachers who are on duty at the various schools which have been established at the convalescent hospitals. As none of our social agencies have funds for this purpose it will be necessary to secure volunteers, so that our second step is to

2. *Canvass Technical Schools and Teachers, School Teachers, and Various Crafts and Trades to Ascertain if They Will Give Free Instruction When It is Desired.*—For a number of reasons it may be impossible for our patients to go to shops and it will be necessary to provide them with some form of work which they can do at home. Much to my surprise I recently learned that labels are occasionally pasted on match boxes by hand. I had thought that this was always done by machinery and that hand made match boxes and labeling had "gone out" with the time of Dickens. There may be a number of such simple occupations, so that we must

3. *Ascertain the Forms of Work Which Can be Carried on at Home Which Have a Commercial Value.*—Certain patients, probably the majority of them women, are able to make articles which have a commercial value but for which they have no market. They may lack the initiative necessary to create one. For these we must

4. *Ascertain the Best Way of Disposing of Products.*—Possibly Women's Exchanges can be utilized for this.

In this connection it must be remembered that the cost of selling an article is usually 25 per cent. of its selling price.

It is believed that occupational teachers are well fitted by training and practice to give advice as to the occupations which the handicapped may pursue, so that a further service to the community may be to

5. *Advise With Charity Workers and Others as to the Most Suitable Occupation for Individuals.*—But before this can be done we must know the capabilities of the patient, and especially is this true in the case of the cripple. I need only refer to the work of Professor Amar in France and Dr. Bourillon in Belgium who carefully test the patients to ascertain their physical capabilities. Trained men and rather expensive apparatus is necessary so that

6. *A Consulting Staff Should be Formed of a Number of Specialists Consisting of at Least One Psychologist, Orthopedist, Surgeon, Aurist, Ophthalmologist, Etc., to Test Our Patients.*—It has been found that some of the handicapped are able to carry on certain trades especially well. Their defect does not seriously interfere with the work. I might instance broom making, which is done so well by the blind. It seems proper, therefore to

7. *Conduct a Propaganda to Restrict Certain Occupations to Certain Forms of the Handicapped.*—Recently my attention was called to two advertisements. One for men to shell cocoanuts—"Work which can be done by one-legged men." The other for workers in a noisy factory—"For which a deaf person was well fitted." The tuberculous should not be lost sight of in this step.

Lastly, the interest of everyone should be enlisted to

8. *Gather References to Occupational Therapy and Classify Them.*—So much is being published, and in such unexpected places that it is extremely difficult to keep track of all the articles that appear, the instances where the handicapped have succeeded, and the unusual

occupations which may be undertaken by them. It was recently suggested to me that one-armed and legless men could be utilized as traffic policemen. Mr. Gilbreth has proved that a deaf, one-armed, one-eyed, legless man can carry on the new occupation of dental nurse which he proposes as an economic asset to the community. His paper on the subject is most interesting and convincing.

I believe that all of the steps which have been proposed, if carried out, will tend to make for personal and community efficiency. That they will require personal sacrifice of time and effort on the part of those behind the movement is perhaps more obvious, but by active co-operation of the social agencies, the consulting staff, ergotherapeutists, and various trade organizations, the work will be made easier. It should be noted that the active co-operation of each one of these groups is absolutely necessary for the success of our movement. A house may be built with only a roof, as the so-called dog tent, but it is a much better dwelling if it has walls, floor, etc. Just so with our plan. For completeness and effectiveness there is needed a number of different agencies, each one "doing his bit" to make the whole practically effective. The consultant's opinion that John Jones can use his left arm stump to aid in pushing a lawn mower has a negative value unless he is taught how to do it by the ergotherapeutist, and the social agent helps him to find a lawn mower to push and lawns to mow.

Finally, the community which carries out the plan as outlined will be prepared to care for an influx of war cripples and to turn what would otherwise be an economic loss into an economic asset.

It would seem that some such plan might be carried out in almost any community. It is necessary that an individual, or a group so qualify themselves that he or

they may serve as experts and consultants in the community in which they live. There are industrial cripples in every locality, or those defective by disease. If these can be educated to be only partially self-supporting a distinct economic service will be conferred upon the community.

Further, while the United States government will undoubtedly take measures for the rehabilitation of war cripples and give them vocational education, they will eventually return to their old homes, or go to other places. It will be necessary to provide some oversight over them that they may be kept employed, that they do not lose courage, and perhaps that further instruction be given them. The social agencies can undoubtedly do much to aid but it is readily conceivable that the ergotherapeutist can also do much by giving expert advice and thereby save useless or wasteful efforts of those less qualified.

Canada has found that social service or follow-up work is necessary to prevent the discharged soldiers from becoming discouraged and giving up the positions or work for which they had been trained. In our own country the Red Cross, through its Home Service, is preparing to take up this work.

CHAPTER XVI

CONCLUSION

It is hoped that the preceding chapters will be found helpful to those who may be responsible for the direction of occupational therapy. Much more might have been said but perhaps sufficient information has been given.

It must be understood that there are many problems yet to be solved, and it is hoped that they will attract the attention of the research worker. There are many difficulties to be encountered, chiefly centered about the emotional reaction of the patient. Why does one form of work, say carpentry, appeal to one man and not to another, when they are apparently of similar mental caliber and from the same social level? Is it due to some association, to a difference in training (which may be practically equivalent to the same thing) or to some other factor? Again if two men like wood work, why does one prefer to make bird houses and the other toys? These are very simple questions, and yet it can readily be seen are difficult to answer. Why do you prefer Camembert to Roquefort? Or Verdi to Wagner? In all probability the answer lies somewhere in the associative activities, but how can we most quickly stimulate the association which will give us the best co-operation of the patient? Or to put it differently, arouse his interest. As results of any psychological processes are usually slow in being reached, and as they must be corroborated by a number of different observers, it is incumbent on all of us to record our observations in order that in time accurate knowledge may result.

Probably more difficulties are to be encountered among the mentally sick than in other groups, yet we know that

considerable accurate information has come to us from the psychiatrists of bygone days. There are a number of questions regarding work in this group which should be solved. Perhaps the most important is—How long shall the working periods be in order to avoid fatigue and keep up the interest of the patient? This will probably have to be considered from the standpoint of different crafts and forms of work. I have known hourly periods to permit of but little more than a "start" at a given task with a consequent feeling of dissatisfaction in the patient. Again an hour and a half of basketry has produced quite marked fatigue in the same mild case of neurasthenia.

What length of time shall the patient spend on a given occupation? Here the kind, the intellectual level and the mood must all be considered, but especially the end result for which we are striving.

What form of occupation shall be given to the hypomaniacal case? I believe that it should be simple, and of a somewhat stereotyped character in order that there should be little or no stimulus to the patient's already active associative functions, but wish this opinion corroborated by the observations of others.

How much effort, how much time, shall be expended by the nurse or teacher in stimulating a patient to take up occupation? Several writers, among them Dr. Herbert J. Hall[1] and Mr. George Edward Barton,[2] have emphasized the fact that a large amount of potential labor is going to waste in our hospitals and other eleemosynary institutions. Granting that every effort should be made to promote recovery, that no time-saving or expense-saving consideration should deter us from attempting to restore a sick mind to mental health, it seems to me that there should be a limit to the time and effort expended in transforming the unwilling worker into a regular toiler in an industrial shop. I believe

[1] The Work of Our Hands. Moffat, Yard & Co.
[2] Re-education. Houghton, Mifflin & Co.

that often time and effort are wasted by the teacher when the same result might be accomplished differently. For example, when a patient refuses to go to the industrial shop or handicraft class, it is useless to spend a great deal of time in persuasion. A better plan is to cease all attention to the obstinate one and to expend the efforts on his or her neighbors. At the same time induce one of those neighbors to take an interest in the stubborn one and persuade him to work. Sometimes a certain caste feeling can be created with the aid of patients, so that idleness is looked down upon as something of which to be ashamed, as it is in all normal American communities. It frequently helps if some special privilege is given to those who work in the shops, which brings up another question, that of rewards.

Shall patients be rewarded? If so, how? It is probably easier to solve the question of rewards in a hospital having a large population than in a small one. A comprehensive answer which will cover all kinds of hospitals has not yet been formulated. A special dietary, special quarters, extra liberties, have all been tried as well as a system of scrip[1] by means of which the patients were able to purchase luxuries like candy and tobacco at the hospital shop. Probably, the giving of special diet and privileges is the best method of encouraging workers in small hospitals, but do not forget that judicious praise, even of small effort, has great value. This like many other questions, will require a further period of investigation before decided answers can be given.

In his introduction to Mr. Boring's paper (see p. 33) Dr. Franz also asks a number of questions which should certainly be answered if we are to place the subject of

[1] One of the most recent scrip experiments was at The Commonwealth of Sea View Farms, West New Brighton, Staten Island, N. Y., under the Department of Public Charities of the City of New York. This experiment was abandoned on account of a change in administration.

occupation therapy upon a scientific basis. He states that the most important angles from which the subject may be viewed are the therapeutic or prescription angle and the economic or financial angle. "If the matter be looked at from one angle without considering others, there must be a loss to the patients because of this one-sided view, and it is only by a proper adjustment of observations from all angles that a correct and equitable solution of the complex problem or problems will be reached, and the patients thereby receive the greatest benefit.

"The psychiatrist who has charge of a ward containing 100 patients, or of a hospital containing several thousand patients, has a number of questions to ask.

"Is occupation a measure for the relief or retardation of mental disease?"

"Is it beneficial in all mental diseases?"

"If not, in what diseases is it beneficial?"

"To what extent should this therapeutic measure be used, and in what stages of the disease is it indicated or contraindicated?"

"Is it harmful to certain patients, irrespective of the type of mental disease?'

"These questions, and many others, cannot be answered definitely at the present time. They will demand for solution the attention of many workers, using the best scientific methods, before definite answers can be given and before reasonable prescriptions of occupation can be formulated.

"The local financial and the broader economic aspects demand attention in a thorough consideration of the subject but the latter have little bearing upon the welfare of the patient and will not be dealt with here."

"Assuming the general therapeutic value of occupation to be established, there are a number of questions to be answered:

"What kind of occupation is best fitted to restore certain types of patients to mental health?"

"Are the common tasks of the home, of the farm, or of the factory useful means of bringing about cures?"

"Or, are those occupations of a nature less familiar to the patient the more beneficial to him?"

It must be understood that I am in complete sympathy with scientific methods and scientific research, but we must not despise empiricism. Centuries before Newton discovered the law of gravitation, warring nations and tribes took advantage of that force to repel enemies by hurling stones down upon them. The valuable properties of many of our drugs were known a long time before scientific investigation disclosed the manner of their action. At the present time, it is doubtful if the majority of physicians, when prescribing certain drugs, give much thought to the results which have been achieved by laboratory investigation. It can readily be conceded, however, that laboratory or scientific investigation of such drugs has given an exactness of dosage which is not possible by empiric means, and has often discovered other effects than those noted by the empiricist. For these reasons, if no other, the scientific investigation of occupation therapy will be most heartily welcomed, but in the meantime let us continue to welcome the "casual observations" of the subject, hoping that they will eventually be corroborated by scientific observations.

Dr. Franz asks: "Is occupation a measure for the relief or retardation of certain mental diseases?" There can be no doubt, to the careful observer, that in depression and in dementia præcox occupations which arouse the interest of the patient and focus his attention upon them, relieve and retard the progress of the malady by replacement with a more healthy manner of thinking. It is also true that the emotions control the bodily functions and these in turn influence the mood or thought, so that we have what may be termed a vicious circle. This has been very well shown by Dr. George A. Crile.[1] We therefore find that our cases of depression and of demen-

[1] Man, An Adaptive Mechanism. New York, Macmillan Co.

tia præcox show physical improvement coincident with the mental.

Dr. Franz's other questions cannot be so easily answered, but I believe that occupation is good in all forms of mental disease, excepting delirium and acute excitement, and even in these I am hopeful that we shall eventually find that some forms of work will produce a soothing effect.

As to the extent to which occupation should be used, and in what stages it is indicated or contraindicated, we must answer that no work should be given to the point of physical and mental fatigue, and that, as is said above, certain forms of work are indicated and certain others are contraindicated, depending upon many factors. Some forms may be harmful in certain conditions. In prescribing the form of occupation to be used we must consider the individual rather than the disease from which he is suffering. The "common tasks" of life are probably more useful in restoring the intellectual worker to mental health because they are "less familiar."

It may be said that practically all of Mr. Boring's conclusions had already been reached by empirical observation. Of his seventh ("There is indication that employment may be beneficial to some patients, although this cannot be asserted positively"), clinical observations have for years shown that *many* patients are benefited by employment.

In fact many observers believe that occupation benefits *all* individuals. Sir John Collie has said:[1] "Personally, I have always believed that hard and continuous work is the only way to be really happy, and that work in one form or another is the only salvation for those who are suffering from functional nervous disease. I have preached this in season and out of season for a period of ten to fifteen years, and it is a great satisfaction

[1] The Management of War Neuroses and Allied Disorders in the Army. *Mental Hygiene*, Vol. ii, p. 1, January, 1918.

to know that so high an authority as Major Mott has endorsed this view in his practice at the Maudsley Hospital." Dr. F. H. Sexton, of Halifax, in an address delivered at Rochester, N. Y., November 15, 1917, said: "I do not suppose that there is anybody that does not know that work is the greatest curative in the world." Other quotations might be given but why multiply them when every clear thinking man if he but analyze his own experience knows that the greatest good and the greatest happiness in his life has come from work well done.

As a final word I want to exhort the occupational director to remember to enlist the co-operation of fresh air and outdoor work. For a great part of the year, it is possible to have considerable work going on out of doors.

More encouragement should also be given to definite outdoor occupations like gardening, poultry raising, bee keeping, as well as the outdoor games. A pleasant change is often appreciated when a basketry or sewing class is held on the lawn. Where equipment cannot be moved, as in printing, the room should be light and airy.

In the foregoing pages an effort has been made to very briefly indicate the duties of the occupation director. While much more detail might have been given it was felt that it would have clouded the main questions, and that such detail would best be worked out by the director who is familiar with his own local conditions. It is hoped that what has been written will be found helpful to those concerned with occupational therapy and especially to those who have charge of such work in institutions.

Recent events in this and other countries have brought about an increasing knowledge by the general public of the value of work as a remedy. With this we may hope that our occupational therapy may become reconstruction therapy in many more instances, and more rapidly give proofs of its value.

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For the development of a knowledge of form and color probably nothing better can be obtained than the series of Industrial Art Textbooks written by Bonnie E. Snow and Hugo E. Froelicher, which are published by Prang and Co. These are published in eight parts, arranged for the different school grades, and are most practical and suggestive.

APPENDIX*

At the recent meeting of the National Society for the Promotion of Occupational Therapy, Dr. Dunton read a paper upon the Principles of Occupational Therapy, in which he suggested that the society formulate fundamental principles for the guidance of those inexperienced in this work.

He offered a number of suggestions, based upon his rules for the guidance of nurses which might be used as a nucleus for the consideration of a committee which was appointed to bring in a report upon this important matter. This committee, consisting of Mrs. Slagle, Dr. W. L. Russell, and Mr. Burnette, was unable to reach any conclusions before the close of the meeting and their report is therefore published below:

To the members of the National Society for the Promotion of Occupational Therapy:

Your Committee on Principles has agreed upon the following as representing the basic principles of occupational therapy:

1. Occupational therapy is a method of treating the sick or injured by means of instruction and employment in productive occupation.

2. The objects sought are to arouse interest, courage, and confidence; to exercise mind and body in healthy activity; to overcome functional disability; and to reestablish capacity for industrial and social usefulness.

3. In applying occupational therapy, system and precision are as important as in other forms of treatment.

*From the Maryland Psychiatric Quarterly, January, 1919.

4. The treatment should be administered under constant medical advice and supervision, and correlated with the other treatment of the patient.

5. The treatment should, in each case, be specifically directed to the individual needs.

6. Though some patients do best alone, employment in groups is usually advisable because it provides exercise in social adaptation and the stimulating influence of example and comment.

7. The occupation selected should be within the range of the patient's estimated interests and capability.

8. As the patient's strength and capability increase, the type and extent of occupation should be regulated and graded accordingly.

9. The only reliable measure of the value of the treatment is the effect on the patient.

10. Inferior workmanship, or employment in an occupation which would be trivial for the healthy, may be attended with the greatest benefit to the sick or injured. Standards worthy of entirely normal persons must be maintained for proper mental stimulation.

11. The production of a well-made, useful, and attractive article, or the accomplishment of a useful task, requires healthy exercise of mind and body, gives the greatest satisfaction, and thus produces the most beneficial effects.

12. Novelty, variety, individuality, and utility of the products enhance the value of an occupation as a treatment measure.

13. Quality, quantity, and salability of the products may prove beneficial by satisfying and stimulating the patient but should never be permitted to obscure the main purpose.

14. Good craftsmanship, and ability to instruct are essential qualifications in the occupational therapist; understanding, sincere interest in the patient, and an optimistic, cheerful outlook and manner are equally essential.

15. Patients under treatment by means of occupational therapy should also engage in recreational or play activities. It is advisable that gymnastics and calisthenics, which may be given for habit training, should be regarded as work. Social dancing and all recreational and play activities should be under the definite head of recreations.

For comparison, we print also the briefer principles as suggested by Dr. Dunton in his paper:

1. That work should be carried on with cure as the main object.
2. The work must be interesting.
3. The patient should be carefully studied.
4. That one form of occupation should not be carried to the point of fatigue.
5. That it should have some useful end.
6. That it preferably should lead to an increase in the patient's knowledge.
7. That it should be carried on with others.
8. That all possible encouragement should be given the worker.
9. That work resulting in a poor or useless product is better than idleness.

It is hoped that with the above for guidance, the numerous students now studying to assist in the reconstruction of crippled soldiers and sailors will more easily acquire a knowledge of occupational therapy.

INDEX

Stoney's Nursing NEW (5th) EDITION

Of this work the *American Journal of Nursing* says: "It is the fullest and most complete and may well be recommended as being of great general usefulness. The best chapter is the one on observation of symptoms which is very thorough." There are directions how to *improvise* everything.

Practical Points in Nursing. By EMILY M. A. STONEY. Revised by LUCY CORNELIA CATLIN, R. N., Youngstown Hospital, Ohio. 12mo, 511 pages, illustrated. Cloth, $1.75 net. **Published August, 1916**

Morse's Bacteriology for Nurses JUST READY

Dr. Morse presents here that elementary bacteriology needed by the student nurse during the beginning of her work. The language is extremely simple and untechnical, so that the subject can be easily grasped. Only matter germane to the subject of nursing is given.

Bacteriology for Nurses. By M. E. MORSE, M.D., Pathologist to the Boston State Hospital. 12mo of 133 pages, illustrated.
Published March. 1919

Stoney's Surgical Technic NEW (4th) EDITION

The first part deals with bacteriology, including *antitoxins;* the second with all the latest developments in surgical technic. The *National Hospital Record* says: "Pregnant with just the information nurses constantly need."

Bacteriology and Surgical Technic for Nurses. By EMILY M. A. STONEY. 342 pages, illustrated. Cloth, $1.75 net. **October, 1916**

Goodnow's First-Year Nursing 2d EDITION

Miss Goodnow's work deals *entirely* with the *practical* side of first-year nursing work. It is the *application* of text-book knowledge. It tells the nurse *how* to do those things she is called upon to do in her first year in the training school—the *actual ward work.*

First-Year Nursing. By MINNIE GOODNOW, R. N., formerly Superintendent of the Women's Hospital, Denver. 12mo of 354 pages, illustrated. Cloth, $1.50 net. **Published February, 1916**

Aikens' Hospital Management

This is just the work for hospital superintendents, training-school principals, physicians, and all who are actively interested in hospital administration. *The Medical Record* says: "Tells in concise form exactly what a hospital should do and how it should be run, from the scrubwoman up to its financing."

Hospital Management. Arranged and edited by CHARLOTTE A. AIKENS, formerly Director of Sibley Memorial Hospital, Washington, D. C. 488 pages, illustrated. Cloth, $3.00 net. **April, 1911**

Aikens' Primary Studies

NEW (3d) EDITION

Trained Nurse and Hospital Review says: "It is safe to say that any pupil who has mastered even the major portion of this work would be one of the best prepared first year pupils who ever stood for examination."

Primary Studies for Nurses. By CHARLOTTE A. AIKENS, formerly Director of Sibley Memorial Hospital, Washington, D. C. 12mo of 472 pages, illustrated. Cloth, $1.75 net. **Published June, 1915**

Aikens' Training-School Methods for Institutional Nurses

NEW (2d) EDITION

This work not only tells how to teach, but also what should be taught the nurse and *how much*. The *Medical Record* says: "This book is original, breezy and healthy."

Hospital Training-School Methods for Institutional Nurses. By CHARLOTTE A. AIKENS, formerly Director of Sibley Memorial Hospital, Washington, D. C. 334 pages. **March, 1919**

Aikens' Clinical Studies

NEW (3d) EDITION

This work for second and third year students is written on the same lines as the author's successful work for primary students. *Dietetic and Hygienic Gazette* says there "is a large amount of practical information in this book."

Clinical Studies for Nurses. By CHARLOTTE A. AIKENS, formerly Director of Sibley Memorial Hospital, Washington, D. C. 12mo of 569 pages, illustrated Cloth, $2.00 net. **Published August, 1916**

Bolduan & Grund's Bacteriology 2d EDITION

The authors have laid particular emphasis on the immediate application of bacteriology to the art of nursing. It is an *applied bacteriology* in the truest sense. A study of all the ordinary modes of transmission of infection are included.

Applied Bacteriology for Nurses. By CHARLES F. BOLDUAN, M.D., Director Bureau of Public Health Education, and MARIE GRUND, M. D., Bacteriologist, Department of Health, City of New York 188 pages, illustrated. Cloth, $1.50 net. **Published November, 1916**

Harding's Higher Aspect of Nursing

This book represents the deductions from the author's many years of personal study and experience both in the training-school and in the field of practical nursing in the hospitals and in private.

Higher Aspect of Nursing. 12mo of 300 pages. By GERTRUDE HARDING. **Published February, 1919**

Beck's Reference Handbook THIRD EDITION

This book contains all the information that a nurse requires to carry out any directions given by the physician. The *Montreal Medical Journal* says it is "cleverly systematized and shows close observation of the sickroom and hospital regime."

A Reference Handbook for Nurses. By AMANDA K. BECK, Graduate of the Illinois Training School for Nurses, Chicago, Ill. 16mo of 229 pages. Bound in flexible leather, $1.50 net. **February, 1913**

Roberts' Bacteriology & Pathology NEW (2d) EDITION

This new work is practical in the strictest sense. Written specially for nurses, it confines itself to information that the nurse should know. All unessential matter is excluded. The style is concise and to the point, yet clear and plain. The text is illustrated throughout.

Bacteriology and Pathology for Nurses. By JAY G. ROBERTS, Ph. G., M. D., Oskaloosa, Iowa. 206 pages, illus. $1.50 net. **August, 1916**

DeLee's Obstetrics for Nurses

NEW (5th) EDITION

Dr. DeLee's book really considers two subjects—obstetrics for nurses and actual obstetric nursing. *Trained Nurse and Hospital Review* says the "book abounds with practical suggestions, and they are given with such clearness that they cannot fail to leave their impress."

Obstetrics for Nurses. By JOSEPH B. DELEE, M. D., Professor of Obstetrics at the Northwestern University Medical School, Chicago. 12mo volume of 550 pages, illustrated. Cloth, $2.75 net. **July, 1917**

Davis' Obstetric & Gynecologic Nursing

JUST OUT—NEW (5th) EDITION

The Trained Nurse and Hospital Review says: "This is one of the most practical and useful books ever presented to the nursing profession." The text is illustrated.

Obstetric and Gynecologic Nursing. By EDWARD P. DAVIS, M. D., Professor of Obstetrics in the Jefferson Medical College, Philadelphia. 498 pages, illustrated. Cloth, $2.00 net. **Published June, 1917**

Macfarlane's Gynecology for Nurses

THIRD EDITION

Dr. A. M. Seabrook, Woman's Hospital of Philadelphia, says: "It is a most admirable little book, covering in a concise but attractive way the subject from the nurse's standpoint."

A Reference Handbook of Gynecology for Nurses. By CATHARINE MACFARLANE, M. D., Gynecologist to the Woman's Hospital of Philadelphia. 16mo of 175 pages, with 70 illustrations. Flexible leather, $1.50 net. **Published October, 1918**

Asher's Chemistry and Toxicology

SECOND EDITION

Dr. Asher's one aim was to emphasize throughout his book the *application* of chemical and toxicologic knowledge in the study and practice of nursing. He has admirably succeeded.

12mo of 209 pages. By PHILIP ASHER, PH.G., M.D., Dean and Professor of Chemistry, New Orleans College of Pharmacy. Cloth, $1.50 net. **Published October, 1918**

Aikens' Home Nurse's Handbook NEW (2d) EDITION

The point about this work is this: It tells you, and *shows* you just how to do those little things entirely omitted from other nursing books, or at best only incidentally treated. The chapters on "Home Treatments" and "Every-Day Care of the Baby," stand out as particularly practical.

Home Nurse's Handbook. By CHARLOTTE A. AIKENS, formerly Director of the Sibley Memorial Hospital, Washington, D. C. 12mo of 303 pages, illustrated. Cloth, $1.50 net. Published March, 1917

Eye, Ear, Nose, and Throat Nursing

This book is written from beginning to end *for the nurse.* You get antiseptics, sterilization, nurse's duties, etc. You get anatomy and physiology, common remedies, how to invert the lids, administer drops, solutions, salves, anesthetics, the various diseases and their management. *New (2d) Edition.*

Nursing in Diseases of the Eye, Ear, Nose and Throat. By the Committee on Nurses of the Manhattan Eye, Ear and Throat Hospital. 12mo of 291 pages, illustrated. Cloth, $1.50 net. Published Sept. 1915

Paul's Materia Medica NEW (3d) EDITION

In this work you get definitions—what an alkaloid is, an infusion, a mixture, an ointment, a solution, a tincture, etc. Then a classification of drugs according to their physiologic action, when to administer drugs, how to administer them, and how much to give.

A Text-Book of Materia Medica for Nurses. By GEORGE P. PAUL, M.D. 12mo of 295 pages. Cloth, $1.50 net. Published August, 1917

Paul's Fever Nursing NEW (3d) EDITION

In the first part you get chapters on fever in general, hygiene, diet, methods for *reducing the fever*, complications. In the second part each infection is taken up *in detail.* In the third part you get antitoxins and vaccines, bacteria, warnings of the full dose of drugs, poison antidotes, enemata, etc.

Nursing in the Acute Infectious Fevers. By GEORGE P. PAUL, M. D. 12mo of 275 pages, illustrated. Cloth, $1.00 net. October, 1915

McCombs' Diseases of Children for Nurses

NEW (3d) EDITION

Dr. McCombs' experience in lecturing to nurses has enabled him to emphasize *just those points that nurses most need to know. National Hospital Record* says: "We have needed a good book on children's diseases and this volume admirably fills the want." The nurse's side has been written by head nurses, very valuable being the work of Miss Jennie Manly.

Diseases of Children for Nurses. By ROBERT S. MCCOMBS, M. D., Instructor of Nurses at the Children's Hospital of Philadelphia. 12mo of 509 pages, illustrated. Cloth, $2.25 net. **Published June, 1916**

Wilson's Obstetric Nursing NEW (3d) EDITION

In Dr. Wilson's work the entire subject is covered from the beginning of pregnancy, its course, signs, labor, its actual accomplishment, the puerperium and care of the infant. *American Journal of Obstetrics* says: "Every page empasizes the nurse's relation to the case."

A Reference Handbook of Obstetric Nursing. By W. REYNOLDS WILSON, M. D., Visiting Physician to the Philadelphia Lying-in Charity. 258 pages, illus. Flexible leather, $1.50 net. **April, 1916**

American Pocket Dictionary NEW (10th) EDITION

The *Trained Nurse and Hospital Review* says: "We have had many occasions to refer to this dictionary, and in every instance we have found the desired information."

American Pocket Medical Dictionary. Edited by W. A. NEWMAN DORLAND, A. M., M. D. Flexible leather, gold edges, $1.25 net; indexed, $1.50 net. **Published September, 1917**

Lewis' Anatomy and Physiology THIRD EDITION

Nurses Journal of Pacific Coast says "it is not in any sense rudimentary, but comprehensive in its treatment of the subjects." The low price makes this book particularly attractive.

Anatomy and Physiology for Nurses. By LEROY LEWIS, M.D. 12mo of 326 pages; 150 illustrations. Cloth, $1.75 net.
Published September, 1913

Goodnow's War Nursing

Written at the front and on the battlefield, this book shows the inexperienced nurse how to care for a ward of wounded men from arrival to dismissal; it introduces you to *actual conditions*, and shows you how they are best met.

War Nursing: a Text-Book for Auxiliary Nurses. By MINNIE GOODNOW, R. N., War Nurse in France. 172 pages, illustrated. Cloth, $1.50 net. **Published December, 1917**

Warnshuis' Surgical Nursing

The author gives you here the essential principles of surgical nursing, and reliable fundamental knowledge based on his own personal conclusions and experiences. Secondary matter is excluded, and all primary and pertinent points are set down briefly and concisely.

Octavo of 277 pages, with 255 illustrations. By FREDERICK C. WARNSHUIS, M.D., F.A.C.S., Visiting Surgeon, Butterworth Hospital, Grand Rapids, Michigan. Cloth, $2.50 net.

Published March, 1918

Friedenwald and Ruhrah's Dietetics for Nurses

NEW (4th) EDITION

This work has been prepared to meet the needs of the nurse, both in training school and after graduation. *American Journal of Nursing* says it "is exactly the book for which nurses and others have long and vainly sought."

Dietetics for Nurses. By JULIUS FRIEDENWALD, M. D., and JOHN RUHRAH, M.D., University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore. 12mo volume of 467 pages. Cloth, $1.50 net. **Published July, 1917**

Friedenwald & Ruhrah on Diet

FIFTH EDITION

This work is a fuller treatment of the subject of diet, presented along the same lines as the smaller work. Everything concerning diets, their preparation and use, coloric values, rectal feeding, etc., is here given in the light of the most recent researches. **Published March, 1919**

Diet in Health and Disease. By JULIUS FRIEDENWALD, M.D., and JOHN RUHRAH, M.D. Octavo volume of 919 pages.

Catlin's Hospital Social Service

Miss Catlin's book is especially planned to help those who are establishing social service centres in new fields, as well as those in dispensaries already firmly established. She has had the practical experience of many years to draw upon.

NELIA CATLIN, R. N., Director of Social Service Work, Youngstown Hospital, Ohio. 12mo of 113 pages, with 43 illustrations. Cloth, $1.25 net. Published May, 1918

Galbraith's Personal Hygiene and Physical Training for Women

NEW (2d) EDITION

Dr. Galbraith's book tells you how to train the physical powers to their highest degree of efficiency by means of fresh air, tonic baths, proper food and clothing, gymnastic and outdoor exercise. There are chapters on the skin, hair, development of the form, carriage, dancing, walking, running, swimming, rowing, and other outdoor sports.

Personal Hygiene and Physical Training for Women. By ANNA M. GALBRAITH, M.D., Fellow New York Academy of Medicine. 12mo of 393 pages, illustrated. Cloth, $2.25 net. Published January, 1917

Galbraith's Four Epochs of Woman's Life

This book covers each epoch fully, in a clean, instructive way, taking up puberty, menstruation, marriage, sexual instinct, sterility, pregnancy, confinement, nursing, the menopause.

The Four Epochs of Women's Life. By ANNA M. GALBRAITH, M.D., with an Introductory Note by JOHN H. MUSSER, M. D. 12mo of 296 pages. Cloth, $1.50 net. Third Edition published March, 1917

Griffith's Care of the Baby

NEW (6th) EDITION

Here is a book that tells in simple, straightforward language exactly how to care for the baby in health and disease; how to keep it well and strong; and should it fall sick, how to carry out the physician's instructions and nurse it back to health again.

Published June, 1915

The Care of the Baby. By J. P. CROZER GRIFFITH, M.D., University of Pennsylvania. 12mo of 458 pages, illustrated. Cloth, $1.50 net

Aikens' Ethics for Nurses

FIVE PRINTINGS

This book emphasizes the importance of ethical training. It is a most excellent text-book, particularly well adapted for classroom work. The illustrations and practical problems used in the book are drawn from life.

Studies in Ethics for Nurses. By CHARLOTTE A. AIKENS, formerly Superintendent of Columbia Hospital, Pittsburg. 12mo of 320 pages. Cloth, $2.00 net. **Published April, 1916**

Goodnow's History of Nursing

Miss Goodnow's work gives the main facts of nursing history from the beginning to the present time. It is suited for classroom work or postgraduate reading. Sufficient details and personalities have been added to give color and interest, and to present a picture of the times described.

History of Nursing. By MINNIE GOODNOW, R.N., formerly Superintendent of the Women's Hospital, Denver. 12mo of 370 pages, illustrated. Cloth, $2.00 net. **Published December, 1916**

Berry's Orthopedics for Nurses

The object of Dr. Berry's book is to supply the nurse with a work that discusses clearly and simply the diagnosis, prognosis and treatment of the more common and important orthopedic deformities. Many illustrations are included. The work is very practical.

Orthopedic Surgery for Nurses. By JOHN MCWILLIAMS BERRY, M.D., Clinical Professor of Orthopedics and Rontgenology, Albany Medical College. Cloth, $1.00 net. **Published July, 1916**

Whiting's Bandaging

This new work takes up each bandage in detail, telling you—and *showing* you by original illustrations—just how each bandage should be applied, each turn made. Dr. Whiting's teaching experience has enabled him to devise means for overcoming common errors in applying bandages.

Bandaging. By A. D. WHITING, M.D., Instructor in Surgery at the University of Pennsylvania. 12mo of 151 pages, with 117 illustrations. Cloth, $1.50 net. **Published November, 1915**

Smith's Operating-Room

The object is to show you how to assist the surgeon according to the newest operative technic. You get the result of active experience systematized, and in concise form. You get a thorough digest of every essential; detailed lists of instruments; glossary of medical terms. Every phase of the subject is covered by ample, practical instruction.

The Operating-Room. A Primer for Nurses. By AMY ARMOUR SMITH, R.N., formerly Superintendent of Nurses at the Woman's Hospital of the State of New York. 12mo of 295 pages, illustrated. Cloth, $1.50 net. **Published October, 1916**

Bandler's The Expectant Mother

This is an anatomy, physiology and hygiene covering those points and functions concerned in child-bearing and designed for the use of the nurse and the mother. Every question of interest to the expectant mother is treated.

The Expectant Mother. By S. WYLLIS BANDLER, M. D., Professor of Diseases of Women, New York Post-Graduate Medical School and Hospital. Cloth, $1.25 net. **Published October, 1916**

Winslow's Prevention of Disease

Here you get a practical guide, giving you briefly the means to avoid the various diseases described. The chapters on diet, exercise, tea, coffee, alcohol, prevention of cancer, etc., are of special interest. There are, besides, chapters on the prevention of malaria, colds, constipation, obesity, nervous disorders and tuberculosis. It is a record of twenty-five years' active practice.

By KENELM WINSLOW, M.D., formerly Assistant Professor of Comperative Therapeutics, Harvard University. 12mo of 348 pages, illustrated. Cloth, $1.75 net. **Published November, 1916**

Brady's Personal Health

This is different from other health books. It is written by a physician with some fifteen years' experience in writing for the laity. It covers the entire range of health questions—care of mouth and teeth, catching cold, adenoids and tonsils, eye and ear, ventilation, skin, hair and nails, nutrition, nervous ailments, etc.

Personal Health. A Doctor Book for Discriminating People. By WILLIAM BRADY, M.D., Elmira, N.Y. 12mo of 400 pages. Cloth, $1.50 net. **Published September, 1916**

Hoxie's Medicine for Nurses

Medicine for Nurses and Housemothers. By GEORGE HOWARD HOXIE, M.D., University of Kansas. 12mo of 390 pages, illustrated. Cloth, $1.75 net.

Third Edition—February, 1918

Böhm & Painter's Massage

Massage. By MAX BOHM, M.D., Berlin, Germany. Edited by CHAS. F. PAINTER, M.D., Tufts College. Octavo of 91 pages, 97 illustrations. Cloth, $1.75 net. *June, 1913*

Boyd's State Registration for Nurses

State Registration for Nurses. By LOUIE CROFT BOYD, R. N., Graduate Colorado Training School for Nurses. Cloth, $1.25 net. *Second Edition—February, 1915*

Morrow's Immediate Care of Injured

Immediate Care of the Injured. By ALBERT S. MORROW, M.D., New York Polyclinic. Octavo of 354 pages, with 242 illustrations. Cloth, $2.75 net.

Third Edition—November, 1917

deNancrede's Anatomy

EIGHTH EDITION

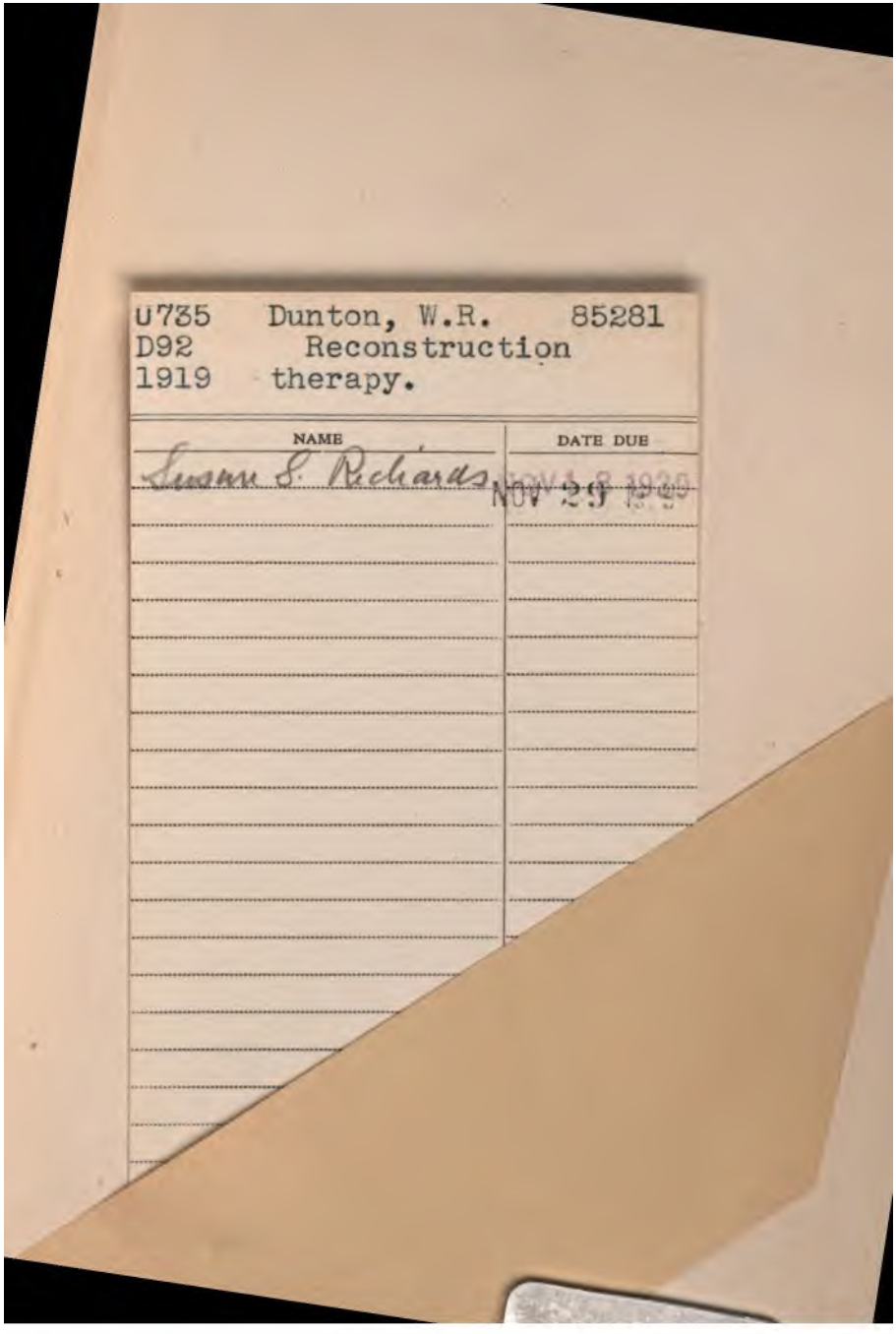
Essentials of Anatomy. By CHARLES B. G. DENANCREDE, M. D., University of Michigan. 12mo of 400 pages, 180 illustrations. Cloth, $1.50 net. *Oct., 1911*

Montgomery's Care of Surgical Patients

Care of Patients Undergoing Gynecologic and Abdominal Procedures (BEFORE, DURING, AND AFTER OPERATION). By E. E. MONTGOMERY, A.M., M.D., LL.D., F.A.C.S., Professor of Gynecology in Jefferson Medical College, Philadelphia. 12mo of 149 pages, illustrated. Cloth, $1.25 net. *Published December, 1916*

Register's Fever Nursing

A Text-Book on Practical Fever Nursing. By EDWARD C. REGISTER, M.D., North Carolina Medical College. Octavo of 350 pages, illustrated. Cloth, $2.50 net. *June 1907*



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NAME	DATE DUE
Susan S. Richards	NOV 29 1929