Easterbrook, C. C. - The Sanatorium Treatment of Active Insanity by Rest in Bed in the Open Air

With the Author's compliments.

THE SANATORIUM TREATMENT OF ACTIVE INSANITY BY REST IN BED IN THE OPEN AIR.

Paper read at the Annual Meeting of the Medico-Psychological Association at London, July, 1907,

BY

C. C. EASTERBROOK, M.A., M.D., F.R.C.P.,

MEDICAL SUPERINTENDENT, AYR DISTRICT ASYLUM, AYR.

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THE SANATORIUM TREATMENT OF ACTIVE INSANITY BY REST IN BED IN THE OPEN AIR.

By C. C. EASTERBROOK, M.A., M.D., F.R.C.P.,
Medical Superintendent, Ayr District Asylum, Ayr.

During the past year I have systematically employed rest in bed in the open air as a special method in the treatment of all patients newly admitted to the Ayr District Asylum; and during the past six months I have carried out the same method in the treatment of all resident patients exhibiting relapses or phases of active insanity, the latter including the most difficult and most dangerous cases in the institution. At present, therefore, all patients in Ayr Asylum who manifest their insanity in such active forms as marked morbid excitement, exaltation or depression, distinct delirium, confusion or stupor, vivid hallucination and delusion, active homicidal or suicidal tendency, impulsiveness and the like, are being treated by the method of rest in bed in the open air, a method which may be conveniently termed the sanatorium or open-air rest treatment of active insanity. Although it is yet too soon to speak as to the ultimate therapeutic value of this system, and several years must necessarily elapse before its effect on the recovery rate in insanity can be definitely ascertained, even a short experience has sufficed to demonstrate the immediate benefits and strong points of the system, and to show that it is a more satisfactory method of treating those who are actively insane than either the outdoor exercise or indoor rest procedures hitherto in vogue, and that, indeed, it secures the advantages without the disadvantages of the exercise and rest systems combined. The particular combination of rest in the recumbent position and in the fresh air of the open would indeed seem to be Nature's

specific for at least the alleviation if not the cure of an attack of insanity; and the method is not only based on sound physiology and correct pathology, but it is so easily carried out in practice, it so obviously benefits the health of the patients—not to mention also that of their nurses—and withal it is so pleasant a remedy both in the receiving and the giving, that even a comparatively short experience of its employment has convinced me that the systematic open-air rest treatment of active insanity has come to stay, and that at no distant date it will secure a wide sphere of application in asylum practice, and in the treatment of the psychoses and neuroses outside of asylums. Before describing the sanatorium treatment of active insanity I wish to put before you the stages in its development, and to show how, after an apprenticeship in the exercise system of treating active insanity, I came to adopt the rest method, and by allying the latter with the open-air cure, as suggested by the modern treatment of pulmonary tubercle, I arrived at the combined method of rest in bed in the open air, which has been in vogue at Ayr Asylum during the past year.

(1) *The Asylum or Outdoor Exercise Treatment of Active Insanity.*

From 1894 to 1902 I followed the exercise system of asylum practice which has prevailed since the dawn of modern psychiatry, and still has many advocates as a treatment of active insanity. By this system, if a newly admitted patient appears to be in fair physical condition and to have no important complication of heart, lungs, kidneys, and the like, if, in short, he seems to be sufficiently strong and healthy, he is sent to a ward of asylum dayroom or parlour type, placed for a time under special observation by himself, or in a group with others, and prescribed a course of treatment, an essential feature of which is a certain amount of outdoor exercise daily. If, however, his physical condition, general or local, is such as to indicate confinement to bed, he is sent to the hospital department and treated in bed until it is thought that he is sufficiently able physically to be out of bed and to take exercise daily. The foregoing procedure may be conveniently distinguished as the asylum or outdoor exercise treatment of

active insanity. In my experience the intrinsic advantage of this system is the more or less rapid physical improvement of the patient, that is to say, an early improvement in the appearance and condition of the skin, in the condition of the muscles, in the state of the tongue, appetite and digestion, in the action of the bowels, liver and kidneys, in the quality of the blood and circulation, and sooner or later in the weight. The physical improvement is followed by the improvement in the sleep and mental condition in the great majority of cases; that is to say, the improvement in the condition of the general bodily organs usually precedes the improvement in the state of the cerebral cortex and lower nervous centres. This retardation of the mental improvement, in my experience, constitutes the weak point of the outdoor exercise method in the treatment of active insanity, and is due, apart from the factor of the inherent powers of recuperation of the nerve centres themselves, not to the fact of the patient being out of doors, but to the effect of exercise in keeping up an excitation of the disordered nervous centres, and thus in tending to consume unduly their diminishing chromatic substance and store of energy. The treatment of active insanity by exercise has, I think, arisen from the idea that what is good for the muscles and bodily organs generally is likewise good for the disordered brain and nerve centres. There are, however, good reasons for believing that there is an essential difference between the metabolism of the muscles and body generally and that of the nervous system. Thus the observations of Voit and many others (Schäfer's *Text-Book of Physiology*) show that starving men and animals live at the expense of their fat, muscles and glandular organs, and that in fatal cases the fat and muscles suffer the greatest relative loss in weight, whereas the central nervous system suffers the least. Then, again, as F. Gotch (*op. cit.*) has pointed out, whereas during muscular activity, mechanical, electrical, chemical and thermal changes occur, during nervous activity, electrical changes alone are readily demonstrable, chemical changes are very slight, and thermal changes have as yet not been observed. As Gotch remarks, "the negative character of the evidence of (nervous) metabolism is an important circumstance in connection with the rationale of nerve phenomena, and such positive data as exist support the conclusion that nerve metabolism must be very small in

amount." Lastly, Atwater's famous experiment (*U.S.A. Department of Agriculture, Bulletin No.* 44, 1897) was perhaps the first experimental demonstration of the essential difference between nervous and muscular metabolism. He placed a man, kept for the time on a fixed diet and under the other necessary conditions of the experiment, in a respiration calorimeter for twelve days, divided into five successive periods, of rest (1½ days), severe mental work (3 days), absolute rest (3 days), severe muscular work (3 days), and rest (1½ days), and he found that during the period of severe mental work the temperature of the air in the chamber and the amount of carbonic acid given off remained the same as during the days at rest, and that during the period of hard muscular work the temperature distinctly rose and the amount of carbonic acid given off was very conspicuously increased. While, therefore, the metabolism of the nervous centres, as judged by chemical, thermal and mechanical effects, is small in amount in comparison to that of the muscles, electrical phenomena during nervous activity are characteristic features, and indeed the central nervous system may, with a considerable approximation to the truth, be regarded in the light of a battery, which during life is more or less constantly engendering energy from its stores of chromatic or other substance, and therefore tends to become exhausted or fatigued, specially in those diseases, as the psychoses and neuroses, in which chromatolysis is well recognised as an outstanding feature.

As is well known, outdoor exercise, if unskilfully employed in the treatment of neuroses and psychoses, leads to the evils of fatigue, such as bodily and mental exhaustion, ready exhaustibility, insomnia, and specific sensory and motor symptoms of fatigue (as pains in the head, back or limbs, tenderness over the spine or in other areas, fine intention tremors and local twitchings of muscles, increased tendon reflexes and the like), also such effects as impairment of appetite and digestion, and loss in weight. The later researches on the subject by Mosso, of Turin (*Fatigue:* Swan, Sonnenschein & Co., London, 1904), and others, show that fatigue, however produced, whether by muscle work or by brain work, is essentially a nervous phenomenon, an exhaustion and poisoning of the nerve centres, and consequently the idea that exercise in the treatment of active insanity serves as a safety-valve for getting rid of superfluous energy has become

more or less exploded. Systematic outdoor exercise is therefore of doubtful utility in the treatment of active insanity, in which the finer symptoms of nervous irritation and exhaustion are so common. Occasional mild exercise is allowable for the benefit of the muscles and non-nervous organs of the body, provided that it does not give rise to symptoms of exhaustion; and even this amount of exercise is contra-indicated if the patient happens to already exhibit the finer signs of fatigue. But just as rest and exercise are both necessary to the preservation of health, so are they the complement of one another in the treatment of disease, and carefully regulated outdoor exercise is specially useful during convalescence from active insanity. It is, of course, hardly necessary to refer here to the value of regular outdoor exercise in the hygiene of the chronic insane. Not being satisfied with the suitability of the outdoor exercise system for the treatment and observation of newly admitted and actively insane patients, I ceased to employ it in this connection in 1902.

(2) *The Hospital or Indoor Rest Treatment of Active Insanity.*

Since the summer of 1902 it has been my regular practice to receive all patients admitted to Ayr Asylum into wards of hospital type, and to prescribe a preliminary course of bed treatment, during which regular observations are made of the temperature, pulse, respiration, action of the bowels, state of the urine, amount of sleep, weight, mental condition, and any other changes of note, physical and psychical, these observations, and also the dietary and medicines prescribed, being recorded on charts, of which the accompanying is a specimen (see *fac-simile* of Ayr District Asylum chart). These charts, which are ruled on the back for notes on progress, are the same size (foolscap) as the pages of the case-books, into which they are finally collected from the wards, and pasted in their proper places following the records of the history and condition on admission of the various patients. It will be seen that the above procedure is simply an application of general hospital methods to the case of the newly admitted insane, both those obviously suggesting and those apparently not requiring treatment in hospital; and as its distinctive feature is the preliminary course of rest in bed in a ward of hospital type, the method may be conveniently distinguished

as the hospital or indoor rest treatment of active insanity. Having thus had considerable experience of both the outdoor exercise and indoor rest systems in the observation and treatment of actively insane persons, I have no hesitation in recommending, on both clinical and therapeutical grounds, the system of placing all newly admitted insane patients in bed amidst hospital surroundings for at least an initial period of observation and treatment. It may seem strange at this time of day to have to put in a plea for the systematic bed-side or clinical observation and treatment of those whose insanity is sufficiently active to cause them to be sent into asylums, especially when we remember that psychiatrists are constantly preaching the fact that the insane man is a sick man, and that insanity is a disease—a disease of the brain, nervous system and body in general. The fact, however, that the older asylum or ambulatory method of treating and observing those who are actively insane is still largely followed in asylums, is a sufficient reason, and calls for a statement of the advantages which in my experience attach to the system of placing all newly admitted patients in bed amid hospital surroundings for at least a preliminary period of observation and treatment. This period need not exceed two to three days in a small proportion of cases, in which the morbid mental and nervous condition is quiescent and the bodily health is fair; but even this short period in such cases suffices to secure the advantages of the hospital system, which are chiefly as follows:

Firstly, it is a good procedure from the point of view of the *physician*, inasmuch as it enables him to make a more satisfactory examination of the patient's physical and mental condition from day to day. All the bodily functions, discharges and symptoms of the patient, his dieting and feeding, medication, etc., being under constant bedside observation, and the facts being recorded on the clinical chart, any changes which occur are not so likely to escape notice, and so the physician feels that he has a more satisfactory clinical grasp of his patient, and can observe his progress from day to day with greater precision and care.

Secondly, it is a good procedure from the point of view of the *nurse* for sundry reasons, chiefly that it enables the nurse likewise to carry out with greater satisfaction to himself or herself the recognised duties of the vocation of nursing; for the patient being under constant supervision in bed has his various require-

CHART.

A. D. A. CHART. WARD_____

Date of Admission	Name and Age of Patient	Duration of Illness on Admission

Date	DIET AND EXTRAS	Date	REMARKS	Date	MEDICINES

Height _____ inches
Weight _____ lbs.
do _____ lbs.
do _____ lbs.

TEMPERATURE FAHRENHEIT'S SCALE.

TEMPERATURE CENTIGRADE SCALE.

Pulse	M. E.															*Pulse* M. E.
Resp	M. E.															*Resp* M. E.
Motions																*Motions*
Urine, ozs.																*Urine, ozs.*
Sleep, Hours.																*Sleep, Hours.*

One side of chart reproduced.

ments more readily observed and more readily attended to. Further, patients who are actively insane, in my experience, are more contented and more manageable in bed than on their feet, and less apt to be dangerous to themselves or others, if so inclined, with the result that the chances of undesirable accidents are considerably reduced ; and, consequently, the bed treatment of the actively insane makes the difficult and often trying work of the mental nurse safer, easier, and more pleasant to all concerned. Again, the regular practice of treating all newly admitted insane patients in bed amid hospital surroundings is more effective than all the preaching in making the probationer nurse realise the cardinal fact that insanity is an illness, disorder, or disease of the body corporeal.

Thirdly and chiefly, the hospital system is a good procedure from the point of view of the *patient*, partly as the result of the preceding factors—the more satisfactory attendance by physician and nurse—and partly for other reasons. Thus, it is well known that those newly admitted insane patients who are sufficiently in their senses to realise their surroundings often keenly resent being sent to an asylum, regarding it more or less in the light of a degradation and something to be ashamed of, with consequent wounding of the *amour propre*, and the arousal of an attitude of mind which is unfortunate at the outset of treatment and is not conducive to recovery. If such a patient on admission is placed in bed amid hospital surroundings and treated as a sick man, as he really is, he from the outset comes to regard himself as a sick man and not as an injured man, as he is more apt to do if received straightway into the less familiar but readily recognised environment of the ordinary asylum day-room or parlour. And further, the more able-bodied the patient appears to be, the more likely is he, as a rule, to resent his confinement, and therefore the more reason for placing this type of new arrival for a time in bed amid hospital surroundings ; for, under the circumstances, it is better that his mind should be occupied with the suggestion that he has been and is ill, than that it should become the seat of those more turbulent feelings of injured self-esteem, indignation, and the like, which effectually banish for the time all sense of peace and contentment. Lastly, by placing the new arrival in a comfortable bed, we are employing the most familiar means at once of suggesting and of securing bodily and mental rest. And this raises the important

question of the value of systematic indoor rest in the treatment of active insanity, a system which is becoming more prevalent in asylums as a result of the more general adoption of hospital methods during recent years, and which, as is well known, dates from the teaching of Weir Mitchell, of Philadelphia, in 1875 and onwards, as to the value of rest in the treatment of neurasthenia and hysteria. In my experience the intrinsic value of indoor rest in the treatment of the insanities is the more or less rapid improvement in the mental and nervous condition of the patient, evidenced by an early diminution of the intensity of the mental symptoms, resulting in their abatement or disappearance, and by an early diminution of restlessness and of insomnia: in other words, there is characteristically a more or less rapid induction of mental and bodily repose, and of the return of sleep. Following, as a rule, the subsidence of the active cerebral symptoms is a gradual improvement in the physical appearance and condition, nutrition and weight of the patient. During the continuous indoor rest treatment, therefore, the mental improvement commonly precedes the physical. The retardation of the improvement in the physical condition, general metabolism and functional activity of the non-nervous organs is the weak point of the system; and, as is well known, if the indoor rest method is unduly pushed, it leads to the evils attributed to prolonged bodily inactivity, such as sluggish action of the skin, bowels, liver and kidneys, defective metabolism and flaccidity of the muscles, and weakening of the heart and circulation, evils, however, which Weir Mitchell and his followers showed could be obviated in the prolonged rest treatment of neurasthenia by such measures as massage, passive and active movements, baths, electricity, and the like. In my experience, however, of indoor rest in the insanities, in the great majority of cases it is not necessary to keep the patient in bed for the long period of two, three or more months advocated by the Philadelphian School in the rest treatment of mania, melancholia, neurasthenia, etc., for, as a rule, shorter periods of indoor rest suffice to bring about the characteristic subsidence of the active mental symptoms. For this special therapeutical effect, therefore, of the employment of rest in bed, as well as for the other advantages which attach to the practice of indoor bed treatment on hospital lines from the points of view of the patient, nurse and physician alike, the hospital or indoor rest

system is much to be preferred to the older asylum or outdoor exercise method, for purposes both of observation and treatment, and in the case both of newly admitted patients, and of more or less confirmed residents during their relapses and phases of active insanity.

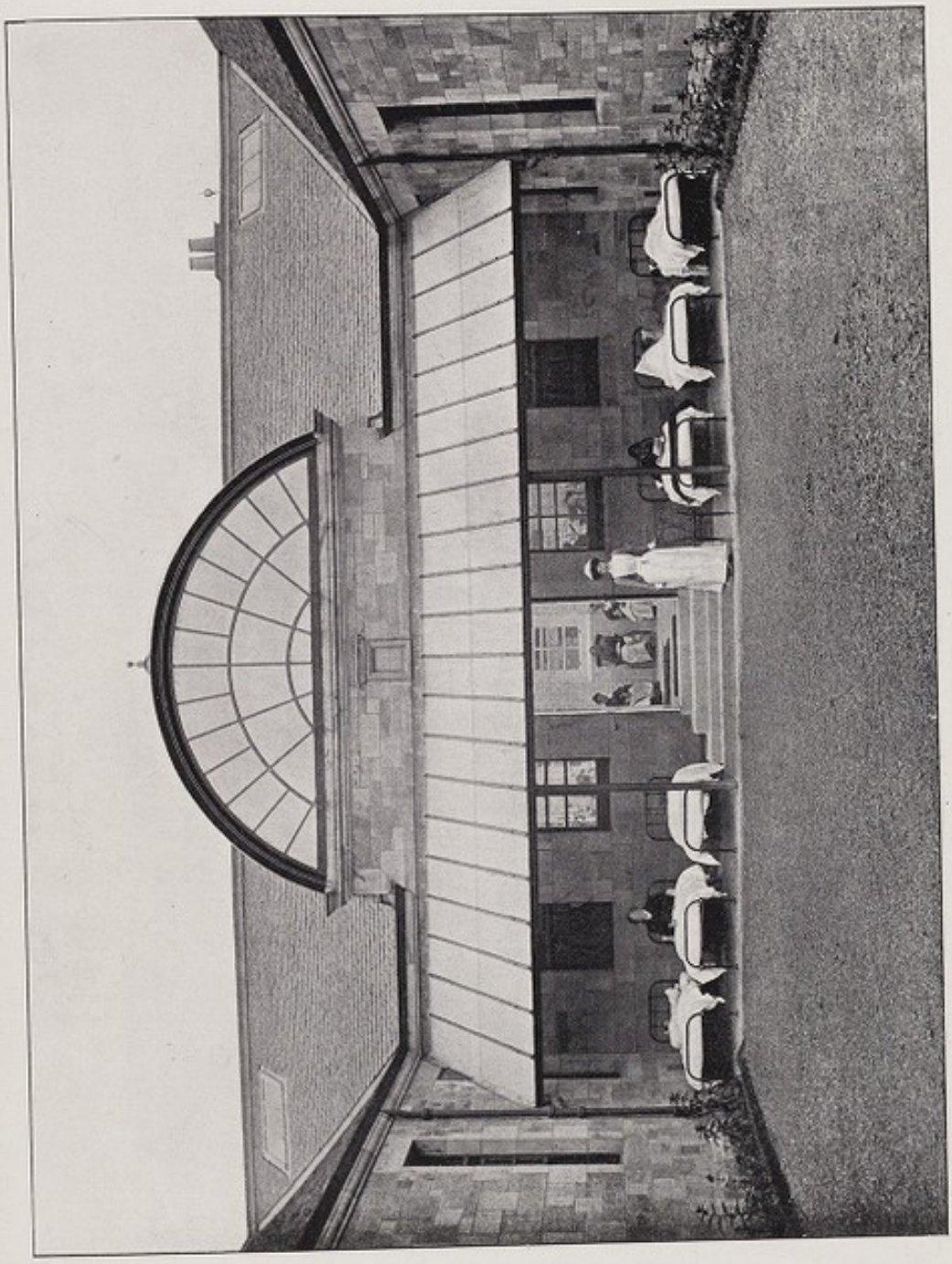
The reason why rest in bed is beneficial in active insanity is fairly obvious in cases of morbid excitement and exaltation, delirium and confusion, vivid hallucinatory and delusional states and impulsiveness. The very fact of being in bed suggests to the patient the calm and rest and induces the sleep which are so desirable for him; and the inactivity of the recumbent attitude, by diminishing the inflow of afferent impressions from the muscles to the sensorium, and therefore the outflow of impulses from the motor and psycho-motor areas to the muscles, leads to a physiological reduction of restlessness. The rationale of rest in morbidly depressed, stuporose, and catatonic cases, in which muscular passivity, resistiveness, and even paresis are often prominent features, is at first sight not so evident. S. J. Franz and G. V. Hamilton (*Amer. Journ. Insan.*, October, 1905), indeed, recently advocated exercise in melancholia, basing this practice on experimental investigations of the mental reaction-time of melancholiacs. They observed that these mental reactions, which are usually retarded, were quickened in the afternoons following morning exercise; also, however, in the morning following a restless or sleepless night. They read the quicker reactions as meaning mental improvement, considered that melancholiacs required "keying up," and concluded that in melancholia there was a condition of lowered irritability, which it was desirable to raise to a normal level by systematic exercise. Franz, however, from later experiments (*Amer. Journ. Psychol.*, January, 1906) admits that there is no satisfactory evidence to show that the retardation in melancholia is due to lowered irritability, and states that while systematic exercise may lessen the mental retardation and change a habit of slowness into one of quickness, it does not cure the depression. It will be readily agreed that melancholiacs are none the better for restless or sleepless nights, and the conclusion that one comes to is that quicker reactions produced in melancholiacs by the "keying up" process, in the form of systematic exercise or otherwise, are a fictitious sign of mental improvement, being attributable to the

irritability of a fatigued, poisoned, or morbidly disordered nervous system. At the same time, owing to the passivity of the musculature and body generally in melancholia, stupor and catatonia, and consequently an earlier tendency to the metabolic and other bodily troubles of prolonged bodily inactivity, the treatment by indoor rest cannot be pushed so freely as in mania without recourse to accompanying measures of actual or modified exercise for the benefit of the muscles and non-nervous organs generally. Apart from this consideration, however, the central fact remains that the actively insane man is a sick man, and urgently sick as regards his nervous system; for whatever views we may hold as to the etiology and pathology of insanity, all are agreed that it is the brain which is proximately affected and is the immediate seat of the mental and nervous symptoms characteristic of insanity. In active insanity, therefore, the brain diseased calls for ease or rest, and on psychologic, physiologic, etiologic, and pathologic grounds brain-rest is more or less effectually secured by absolute rest for the time of the body in bed amid surroundings which are congenial and suggestive of cure.

(3) *The Sanatorium or Outdoor Rest Treatment of Active Insanity.*

The sanatorium or outdoor rest treatment of active insanity is simply the hospital treatment by rest in bed carried out daily in the open air in verandahs attached to the wards, instead of inside the wards and their bed-rooms as formerly. I had been much impressed by the improvement exhibited by tuberculous patients, sane and insane, undergoing the open-air treatment. I also recalled certain sun-bathed days in summer at Morningside when all the sick, infirm and bed-ridden patients in the women's hospital at West House were turned out of doors, in beds, hammocks and chairs, and given an annual outing in the fresh air and sunshine; and I retained vivid impressions of the sun-burnt faces, healthier bodies, and more contented minds as the result thereof. Having become convinced from my own experience of the exercise and rest methods that the principle of rest was the correct one in the treatment of the active stages and phases of insanity, I accordingly decided to combine the "rest cure" with the "open-air cure" as a systematic treatment for those acutely and actively insane, and made provision

for this purpose in the design, in 1903, of the new hospital at Ayr, with the opening of which, in 1906, the regular practice of the sanatorium treatment of active insanity was commenced. The daily practice of outdoor rest in the case of the newly admitted patients at the reception wards of the hospital proved so successful that I decided to extend its application to all other actively insane patients in the institution, namely, to residents of longer or shorter standing during their relapses or phases of active insanity, including the most difficult and dangerous cases in the asylum. Two large verandahs at the main buildings were accordingly utilised for this purpose at the commencement of the present year, and these patients also soon began to show the special benefits of outdoor rest as compared with those of outdoor exercise or indoor rest and isolation formerly practised in their case. Owing to the common feature of noisy excitement among such cases, and the tendency of one excitable patient to disturb or to be disturbed by others in the vicinity, I found it advisable to have the beds in these verandahs isolated from one another by means of wooden partitions, thus adding the valuable factor of isolation to the open-air rest treatment. Isolation is also secured at the hospital verandahs by the use of temporary screens between the beds, if necessary, or at times by the use of the smaller verandahs at the hospital which are ordinarily occupied by phthisical patients requiring confinement to bed. The accompanying photographs show the system being carried out in the association and isolation verandahs at the hospital and main buildings of the asylum (see photographs of verandahs for sanatorium treatment). They illustrate the operation in combination of two, and sometimes three, potent agents for the amelioration and cure of those actively insane, namely, open air, rest in bed, and isolation if necessary. Experience has already shown that the verandah accommodation at the hospital could have been increased with advantage, so as to enable all patients in that building who are confined to bed, not only the new and actively insane, but also the sick and infirm—with the exception, obviously, of the excessively weak and moribund—to be exposed daily to the beneficial action of open air. And further, even the more or less able-bodied and quiescent insane, who do not require bed-treatment, and whom we treat in asylums with regular forenoon and afternoon outdoor exercise in walking parties and the like, have likewise benefited from systematic



A. D. A. Hospital. Women's Large Verandah.
To illustrate Dr. Easterbrook's paper.

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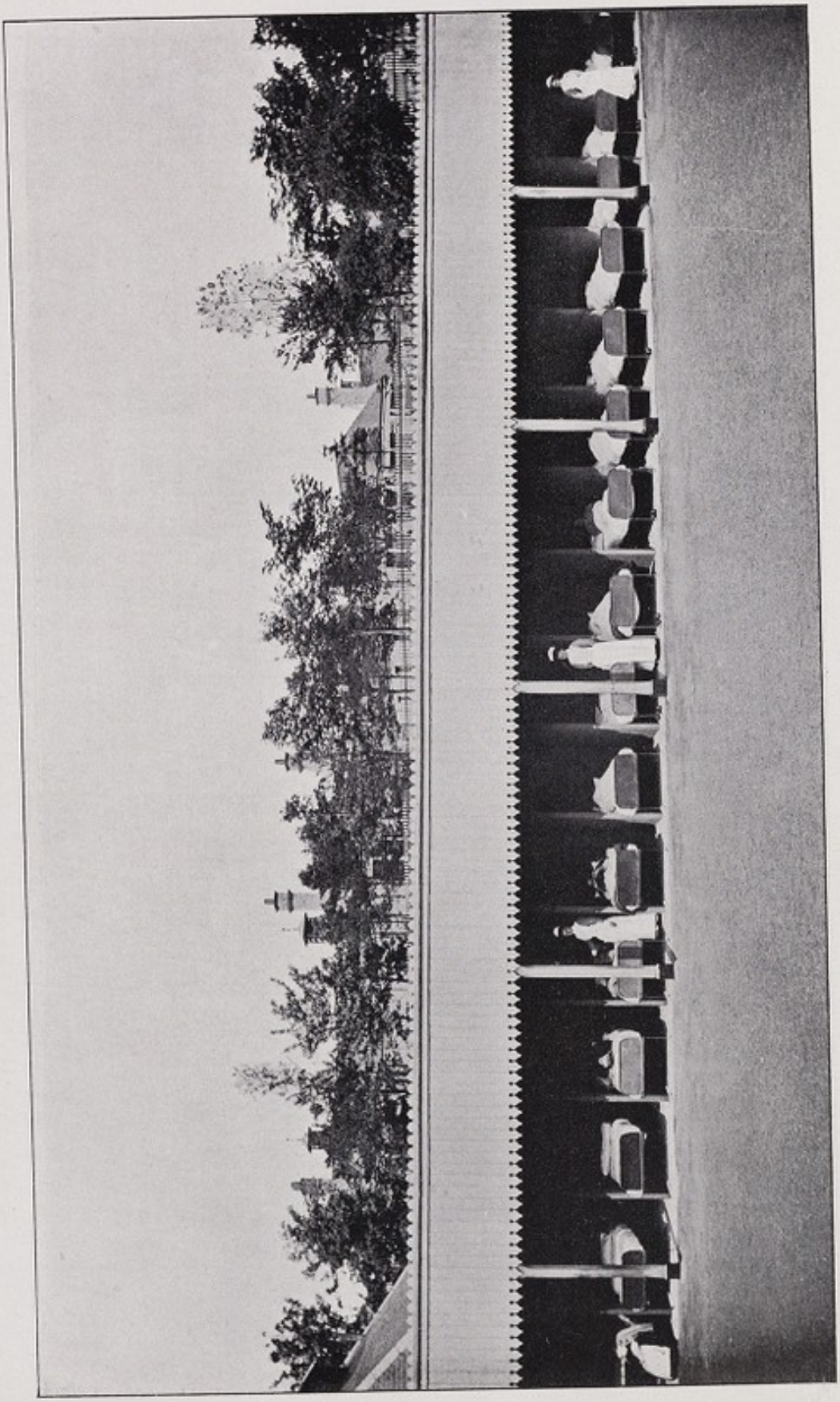

A. D. A. Main Buildings. Women's Isolation Verandah.
To illustrate Dr. Easterbrook's paper.

Bale and Danielsson, Ltd.

daily exposure to the open air so distinctly as to convince me that this class of patient in asylums does not get a sufficiency of fresh air. The general conclusion I have come to, and the standard to be aimed at in the medical administration of an asylum or similar institution, the primary object of which is to secure the best mental and bodily health attainable for the total population, is to carry out a continuous open-air *régime* during daylight hours, from, approximately, seven in the morning to seven in the evening, throughout as much of the year as possible, for all patients, both those requiring rest or bed-treatment, the only exceptions being the excessively weak, and also those not confined to bed, the only exceptions being those who are engaged in necessary indoor work in wards, dormitories, kitchen, laundry and workshops, the exception in their case, however, taking effect only at the times at which such work is being done. Given suitably sheltered verandahs, even meals can be comfortably taken out of doors during most of the year, and the large central dining-hall of asylums, which is already disappearing with the coming of the villa system, will become a thing of the past. To prevent the good effects of the exposure to the open air during the day from being counteracted during the night, when confinement indoors is obviously necessary for the great majority of the insane in asylums, the essential importance of sufficient air-space and ample ventilation in bedrooms and dormitories cannot be too strongly insisted upon. Under such conditions not only does the asylum population become more healthy and contented, but in time the mortality from tubercle, which is three or four times greater amongst the insane than the sane, should markedly diminish, notwithstanding that the insane are specially susceptible to this disease, as is shown by its frequency among them, and also in my experience amongst their near relatives. C. J. Shaw (*Journal of Mental Science*, July, 1907) has recently shown that the tuberculo-opsonic index is subject to greater daily variations, and is on the average lower in the non-tuberculous insane than in healthy sane individuals, and finds that the average index is lower in the acute than in the chronic insane, in adolescents than in adults, in melancholiacs than in maniacs, and is specially low in general paralytics.

As regards the sanatorium treatment of the actively insane at Ayr, all newly admitted patients are, after examination, and

unless too weak physically to be carried or moved about, placed straightway in the verandahs attached to the reception wards of the hospital, and treated with rest in bed in the open air during daylight hours. The hospital verandahs face the south and have pleasant views of the hospital garden, asylum estate and country beyond. They are sheltered from the north, east and west by the adjoining buildings, and their roof is of rippled glass, which is painted in summer for extra protection from the sun. They are sufficiently deep (9 feet) to project well beyond the foot of the beds, but could with advantage have been made deeper to prevent access of rain when the wind is in the south, a difficulty, however, which is met by means of waterproof sheeting spread over the beds. Unusually strong southerly winds with rain, or specially raw and inclement days, are the only weather conditions which hitherto have caused an occasional day's interruption of the treatment. The beds, which are strong, light and portable and were specially made for the purpose, are carried to and fro between the verandahs and the reception wards as required. The amount of bed and personal clothing worn naturally varies with the season, weather, and out-door temperature mainly. The patients are in the verandahs daily from 7 a.m. to 7.30 p.m. during the spring and summer months, when they receive all their meals out of doors, During the months of November, December and January they are taken out to the verandahs in the mornings at half-past eight o'clock, just after breakfast, and during the months September to March they are brought in from the verandahs in the evenings at 5 o'clock, just before the tea-time (5.30 p.m.) of the day staff. Those patients who are sufficiently strong and exhibit no obvious or fine symptoms of fatigue, are allowed to walk to and from the verandahs when the beds are being moved in the morning and evening, and to and from the ward lavatory as required during the day; but apart from this, such patients take no exercise during the period of rest in bed. Patients exhibiting signs of fatigue, weaker and easily exhausted patients, are wheeled or carried to and fro as required, and are allowed no exercise at all to begin with. Extreme physical weakness, for obvious reasons, contra-indicates the treatment. The severity of the mental symptoms is no contra-indication, and even in the worst cases does not prevent the treatment from being

carried out straightway on admission with safety and propriety to all concerned, given plenty of nursing assistance, a sufficiency of bed and personal clothing for the patient, and an isolation verandah; for even such cases respond satisfactorily to the treatment by rest in bed in the open air, and for the reason of its direct and specific beneficial effects. Even in those comparatively rare cases of intense or fulminant excitement, in which instant action is necessary, in which outdoor exercise is impracticable and in addition harmful from the extra exhaustion induced, in which hot packs and the continuous warm bath are likewise objectionable and not devoid of danger, and in which as a rule the only thing to be done at the time is to isolate the patient in bed with as many nurses as are required, and to administer hypodermics of hyoscine or morphine or other sedatives and hypnotics until the critical excitement subsides, I find that if this bed treatment and isolation with the nurses is conducted out of doors instead of indoors, aided if necessary by the temporary administration of sedatives, the patient gets over the crisis more quickly and looks better at the end of it than by the other procedures, and is able to continue the open-air rest treatment without further difficulty.

What, then, are the effects of rest in bed in the open air in the case of newly admitted and actively insane patients, and wherein do the effects of outdoor rest differ from those of outdoor exercise or indoor rest? *First and foremost*, there is a rapid subsidence of the active mental and nervous symptoms. This, as already mentioned, is the special feature of treatment by indoor rest as compared with outdoor exercise, but it is still more pronounced in rapidity and degree when the rest in bed is conducted in the open air. Thus, there is a rapid amelioration of mania, melancholia, delirium, confusion, stupor, vivid hallucinatory and delusional manifestations, impulsivenesss and mental excitement of all kinds, also of restlessness and of insomnia. The general effect is that the large majority of newly admitted patients show distinct improvement of their various morbid mental states, become less restless, more manageable and more contented, and regain their sleep with greater rapidity than with any other method that I know of. This amelioration of the mental condition occurs after one, two, or three days of outdoor rest in quite a fair proportion of cases, but commonly takes one, two, or three weeks, and in a minority

of cases longer. The improvement in the sleep is striking, and in most cases is distinct within a week, the sleep being increased by one, two, or more hours at nights, in addition to occasional light slumbers during the day. *Secondly*, there is a rapid improvement in the physical condition. This, as pointed out before, is the characteristic feature of treatment by outdoor exercise as compared with indoor rest, but is quite as marked and, in some respects, more rapid than with outdoor exercise. Thus, from the first there is a noticeable improvement in the appearance and condition of the skin, which takes on a better colour, becomes clearer, and functionates more satisfactorily. From the first, also, the improvement of the appetite is striking, the patients, in the majority of cases, readily taking their meals themselves and not requiring to be spoon-fed, as is so commonly the case with new patients at first, whether treated by indoor rest or outdoor exercise. Again, there is an early and distinct improvement in the state of the tongue, and of gastric digestion if previously impaired; and actively insane patients with gastric atony and catarrh and coated tongue do specially well with open-air rest. As regards the state of the intestines, it is my practice to secure a preliminary evacuation in all new cases, usually by five grains of calomel on the evening of admission, followed by a tablespoonful of Epsom salts next morning, and if this fails by a copious simple enema the following evening. Apart from this preliminary measure, with open-air rest, the bowels, if previously constipated, become regular in action without the aid of laxatives in the great majority of cases, the exceptions being patients who are specially the subjects of habitual constipation, and who, like similar sane individuals, require to take aperients regularly. Open-air rest does not benefit catarrh of the intestine to the same extent as that of the stomach, additional local treatment being necessary. Again, distinct improvement occurs in the quality of the blood and circulation, anæmia being markedly benefited by open-air rest, as also conditions of debility and atony of the heart and arteries. The muscles of the limbs become similarly toned up and firmer. And, finally, fat is laid on, and the improvement in general nutrition, once established, is soon marked by a satisfactory increase in weight. This increase in weight commonly amounts to five, six, or seven pounds during the first two to three weeks, on a moderately abundant simple diet consisting

largely of milk and milk puddings to begin with, and in my experience the gain in weight sets in earlier with open-air rest than with outdoor exercise. To sum up, in newly admitted cases, with open-air rest, there is a *rapid and simultaneous improvement* of both the mental and the physical condition of the patients; there is not the retardation of the mental improvement which occurs with treatment by outdoor exercise, nor the retardation of the physical improvement which occurs with treatment by indoor rest.

As to the effects of open-air rest and isolation in the case of the resident and more or less chronic patients during their relapses or phases of active insanity. Such patients in the past were chained in fetters or manacles, at a later date restrained in straight-jackets or locked up in miserable dens, and now-a-days are taken out regularly for exercise two or three times a day; or, if exercise fails, as it does in a certain percentage of cases in which it cannot be carried out with safety or propriety, they are treated, as many a chronic invalid at home is treated, with more or less prolonged confinement to bed and bedroom under the observation of a nurse or nurses, sedatives being administed if they cannot be avoided. It may be said that outdoor exercise and indoor rest with isolation are at the present time the common and most hygienic procedures for dealing with this class of patients. All such cases at Ayr are now treated with open-air rest and isolation during the same hours of daylight as the newly admitted patients, namely, 7 a.m. to 7.30 p.m. during spring and summer, and shorter periods during other months; and consequently, indoor isolation during the daytime for active insanity has to all intents and purposes been abolished, like its predecessor, locked indoor isolation or seclusion.

What, then, are the changes noticeable, more particularly in such chronic cases undergoing open-air rest and isolation in place of indoor rest and isolation as formerly, changes which, therefore, must be due largely, if not entirely, to the prolonged daily exposure to the open air? *Firstly*, the patients are undoubtedly improved mentally—that is, they become less excited, less noisy, less restless, and, as their attendants and nurses say, they become more manageable and more contented than formerly. Further, they sleep distinctly better at night and are less noisy at night. This mental and nervous improve-

ment in consequence necessitates the use of still fewer sedatives and hypnotics than formerly. *Secondly*, they are distinctly improved physically; their skin is healthier, their appetite is better, and their bowels become more regular—a very interesting effect of fresh air. Both in the case of newly admitted and chronic patients undergoing verandah treatment the administration of laxatives has distinctly diminished. The preceding observations apply also to the other patients in the wards of the main buildings who are not undergoing bed treatment in the verandahs, but now, like the verandah patients, spend the day in the open air, occupying the courts on to which the verandahs look, except at walking hours and meantime at meals. The verandah patients, however, receive their meals outside, and as the verandahs at the main buildings are specially well sheltered, verandah treatment of the chronically excited patients is carried out in all weathers. The interesting fact has, therefore, been demonstrated that those resident patients who formerly went out for the customary forenoon and afternoon exercise, as in all similar institutions, now, since being exposed regularly to open air during most of the day, are improved physically and mentally, have a healthier appearance, sleep better and are less noisy at nights; and further, in the case of those patients who are subject to distinctly recurrent attacks of active insanity, it is already noticeable that the attacks are becoming less frequent, and when treated with rest and isolation in the open air are less severe and last a shorter time than formerly. At present nearly 10 *per cent.* of the population at Ayr asylum is being treated for active insanity by the method of open-air rest.

Comparing, then, the general therapeutical effects in active insanity of outdoor exercise, indoor rest, and outdoor rest, I find that outdoor exercise benefits primarily the physical condition but may retard the mental improvement; that indoor rest benefits primarily the mental condition but may retard the physical improvement, and that outdoor rest benefits from the first both the mental and the physical condition. Outdoor rest thus from the outset promotes both mental and physical improvement and so retards neither; further, it avoids the risk of undue exhaustion which attaches to the method of exercise; and lastly, it obviates the evils of bodily inactivity and sluggish metabolism which attach to prolonged indoor rest. Further,

my observations show, firstly, that the advantages which have hitherto been attributed to the exercise treatment of active insanity are due, not to the exercise, but to the fact of the patient being out of doors; for regular exposure of the patient to the open air during most of the day without exercise secures the characteristic physical improvement, and more readily if combined with rest in bed. And secondly, that the disadvantages which have hitherto been attributed to the prolonged treatment of the neuroses and psychoses by the indoor rest or Weir Mitchell method are due not so much to the factor of rest as to the confinement indoors; for the sanatorium treatment by rest in bed in the open air not only prevents the evils of sluggish metabolism and the like, but remedies them if present, securing an all-round physical improvement; and in my experience, the open-air rest treatment may with benefit and safety be continued for months if necessary without recourse to massage, active movements, movements with resistance, electrotherapy and the like, it being, however, advisable in such cases to permit the daily walk to and from the verandahs morning and evening, and every now and again to allow the patient to sit up in a chair in the open air for a day or perhaps more, this being done chiefly with the object of ascertaining whether the change will be beneficial, apart from the reason that it introduces in such cases the desirable element of variety in the routine of the treatment. Such variations in prolonged severe cases, however, are not permissible if distinct symptoms of fatigue are present, for continuous absolute rest is the best safeguard against the special risk of fatal exhaustion in such cases.

The duration of the sanatorium treatment in the case of new patients naturally varies. In a small proportion of cases, in which the bodily health is fair and the mental and nervous condition is quiescent, the period need not exceed two to three days, which I regard as the minimum, and desirable even in such cases, for the purpose partly of the more satisfactory clinical observation thereby secured, and partly for the psychologic and other therapeutic advantages which attach to the system of an initial period of rest in bed for newly admitted patients, as already explained under the hospital system. Commonly a period of one, two, three or four weeks of sanatorium treatment suffices, and so in the great majority of cases the period of rest in bed in the open air does not exceed one

month—a considerably shorter period than the two, three and more months commonly employed by the chief advocates of the rest treatment carried on as hitherto indoors. The mental and bodily conditions each constitute the guide as to the duration of the treatment, and it may be stated generally that as soon as the active mental and nervous symptoms have subsided, and physical improvement has become established, as gauged specially by an increase in weight, the rest in bed stage ceases; but the open-air treatment still goes on, the patient being prescribed much sitting with occasional short walks in the hospital garden, until convalescence is fully established, when exercise and work may be pursued with more freedom. During the after-treatment following the period of rest in bed the gain in weight continues to increase satisfactorily. The dietary enjoined during the sanatorium treatment is a simple, digestible, and moderately abundant one, comprising largely milk and milk puddings to begin with, and sooner or later light ordinary diet with extra milk, eggs, and the like, the chief guides being the particular taste of the patient, and the state of the appetite, digestion and weight. It may be mentioned here also that during the sanatorium treatment of active insanity, as with other methods, any concomitant bodily disorders present which specially call for treatment, in addition to that supplied by the rest in bed and the open air, are corrected so far as is possible. And further, during verandah treatment, if the patient is sufficiently fit mentally and physically, light reading, sewing, games of draughts, dominoes, and the like, are enjoined, as they serve to occupy the mind of the patient in healthy directions without undue effort, and thereby to relieve any tedium arising out of the treatment.

From what has been said it will be gathered that the special efficacy of the sanatorium method in the treatment of active insanity is due to the action of rest in bed *plus* that of the open air. The *modus operandi* of rest is comparatively simple, and has already been referred to; that of the open air is more complicated, and herein lies a wide and worthy sphere for the investigator—the pharmaco-dynamics of the fresh air of the open as a remedy for the preservation of health and the cure of disease. The fresh air has an undoubted soothing and soporific influence on the nervous centres, and the cooler outdoor atmosphere

stimulates general bodily metabolism and appetite, both of which effects render the open air of special value in the treatment of active insanity. But in the treatment of the insane, and, indeed, of the sick in general, by exposure to the fresh air of the open, we cannot overlook the concomitant operation of such beneficent influences as the soothing action of soft breezes playing over the features, the comforting effect of the pleasant sounds and prospects of Nature and her surroundings, as commonly associated with the life in the open, the cheerful influence of sunshine, the health-giving action of the ozone and oxygen and possibly other gases of the atmosphere, and the more obscure influences of light, sound, electricity, heat and cold or temperature, humidity, atmospheric pressure and the like. Indeed, to arrive at the rationale of open air in the therapy of disease, we must take into consideration the entire gamut of its mechanical, chemical, and physical properties and conditions, as regards the influence of which on the human organism for good or the reverse there is now almost a pressing need for further elucidation.

The great importance of an outdoor life in the management of neurotic and insane patients has long been recognised. Largely, no doubt, owing to our habit of associating health with the outdoor life, and sickness with the bed of sickness and confinement to the sick-room, we have in the past come almost instinctively to regard the open air as the inseparable ally of exercise in the treatment of disease, and consequently in practice to confine its use to those conditions, and to those more or less convalescent stages of disease in which it is considered that exercise is suitable and beneficial. Consequently, before the advent of the open-air cure of pulmonary tubercle, to have removed the sick man on his bed of sickness out from the sanctuary of the sick-room into the exposure of the open would have been deemed highly incongruous and even reprehensible by profession and public alike. Thanks, however, to the efforts of the pioneers of the open-air treatment of tubercle, which has assumed so great an importance during the past decade, and has been associated with the names of Hermann Brehmer on the continent, and Trudeau in America, though Dr. Philip, of Edinburgh, tells me it was practised by Bodington and M'Cormac in this country at the middle of last century, the recognition of fresh air for its own sake and not merely as the dormant partner of exercise has at

last come about, and the open air is now taking its proper place as a potent prophylactic and curative agent at the disposal of the physician, and promises to occupy as important a position in the domain of medicine as Listerism in the realm of surgery; and not even to stop here, with active schemes afloat for open-air schools in London and elsewhere, hedge-schools in Switzerland, and open-air nurseries and *crèches*.

Since the advent of the open-air treatment of pulmonary tubercle, which has now found its way into every well-equipped asylum, doubtless many psychiatrists must have been adopting the open-air principle more freely in the treatment of those actively insane. Apart from a preliminary communication by myself on the sanatorium treatment, contained in the article on insanity in the *Medical Annual* for 1907, the only other contribution on the subject with which I am acquainted is a recent paper entitled "The Open-air Treatment in Psychiatry," (*New York Med. Journ.*, February 9th, 1907) by W. Mabon, Medical Superintendent of Manhattan State Hospital, Ward's Island, New York. According to Mabon, the late Dr. A. E. Macdonald introduced tent life for the tuberculous insane at Ward's Island in 1901, and the late Dr. E. C. Dent extended the open-air treatment to the acute insane about 1904. Mabon has continued the system and in the paper reported gives his experience of it. The tents originally used, owing to obvious disadvantages in wet and stormy weather and the difficulties of proper ventilation, have been largely replaced by wood and glass pavilions termed "camps." These are situated near the permanent reception building, into which it would appear that the worst cases are first admitted and frequently undergo, in delirious and similar cases, treatment by warm packs and the continuous warm bath for a week before being sent to the camps, one of which is reserved for bed cases. Mabon speaks very favourably of the open-air method as carried out in the camps or pavilions and tents. He obtains a recovery rate of 40 *per cent.*, and has "found the open-air treatment particularly beneficial for the following classes of the insane: (1) The tuberculous; (2) the feeble and untidy; (3) the retarded convalescents; (4) the acute insane, in whom the psychosis is associated with the anæmic blood states, delirium and loss of sleep."

In the sanatorium treatment at Ayr, which is carried out straightway with all new patients, mild and severe cases alike,

it will have been seen that the essential feature is the combination of rest in bed and the open air, the rest in bed being quite as important as the open air. It seems strange indeed that the combination of rest in bed and the open air as a distinct therapeutic system has not hitherto been recognised in the treatment of the neuroses and psychoses, in which rest and exercise have each played, and still play, so prominent a part. And yet in one of the latest and best expositions of the rest cure, by Dercum, of Philadelphia (*Cohen's System of Physiologic Therapeutics*, vol. viii, Rebman, London, 1903), emanating from the home and fountain head of the Weir Mitchell treatment, there is from cover to cover no suggestion of a possible alliance between rest in bed and the open air, but throughout an estrangement, the result of the tacit association of open air with the antagonistic though complementary system of exercise. The rest in bed, full rest, or strict rest treatment, which lasts for two, three or more months, is always indoor rest, and is to be followed sooner or later by exercise, exercise indoors, and ultimately exercise in the open air; and this applies to the treatment of neurasthenia, hysteria, hypochondria, melancholia, mania, stupor, confusion, delirium, and other neuroses and psychoses. Thus, speaking of the treatment of melancholia, Dercum says (page 197): "Whenever it is possible, other things being equal, radical rest in bed should be carried out. This rest should always be of many weeks' duration, just as it is in the treatment of neurasthenia. Even in cases of melancholia in which the duration of the disease is of unusual length, say a year or more, the patient should, from time to time, be submitted to periods of rest, these periods alternating, according to circumstances, with other periods of open-air and out-of-door life." . . . Again (page 204): "Even when the patient is under rigid rest treatment it is a wise plan to allow him to sit up or exercise about the room for a few minutes twice daily." . . . And again (page 205): "Little by little, as the case progresses, the patient should be permitted to get out of bed; little by little passive movements should be added to the massage, and finally, movements with resistance may be instituted. The time out of bed should gradually be increased, and very soon the patient should be permitted to exercise for short periods in the open air."

From the foregoing description of the sanatorium treatment

of active insanity as practised at Ayr it will be seen that on physiologic, psychologic, etiologic, and pathologic grounds the combination of rest in bed and the fresh air of the open secures in the most natural way the rest required for the nervous centres during their critical experience in an attack of psychosis or neurosis, and so places the patient in the best conditions for recovery. And here it may be asked, What is the recovery rate by the open-air rest treatment in active insanity, and how does it compare with the results by the exercise and rest methods respectively? I have purposely refrained from giving statistics on such points because of the inherent difficulties and fallacies which beset such investigations, and further, because it is too soon yet to speak definitely as to the recovery rate by the open-air rest treatment. I may, however, state that excluding transfers of all kinds, and including only those patients who had not previously during the existing attack been under treatment as certified insane persons, including the good with the bad, the highly recoverable, and the congenital imbeciles and idiots who came in with the others having become certified as insane for the first time in their lives, I obtained, in the case of 512 patients treated under the exercise system, a recovery rate of 42 *per cent.* (the results being slightly better with women than with men), and in the case of 511 patients treated under the rest system a recovery rate of 44 *per cent.* (the results being slightly better with men than with women). And I must merely content myself meantime with the statement that a trial of the sanatorium system as described in the foregoing has convinced me that it is a more satisfactory method of treatment than either the exercise or the rest method as hitherto practised, and that it should in due time yield even more satisfactory results.

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