

THE JOURNAL OF MENTAL SCIENCE.

[*Published by Authority of the Medico-Psychological Association
of Great Britain and Ireland.*]

No. 154. NEW SERIES,
No. 118. JULY, 1890. Vol. XXXVI.

PART 1.—ORIGINAL ARTICLES.

*Cycling for the Insane.** By C. THEODORE EWART, M.D.,
Assistant Medical Officer, Leavesden Asylum.

There is no example of two agents so closely united as Mind and Body without some mutual interference taking place, and an increased knowledge of the workings of our bodies has vastly increased the knowledge of our mental actions, and will continue to do so more and more as we continue our researches. To confine ourselves to the study of the nervous substance would be to misrepresent the union, and the knowledge of that substance, however complete, would not suffice to solve the problem.

In all ages and in all countries it has been recognized that the Feelings possess a natural language or Expression, and so constant are the characteristics that we look upon them as a part of the emotions. In this uniformity of connection between feelings and their bodily expression, our knowledge of each other's mind and character is based, and unless there is deliberate concealment it is not difficult to tell when anyone is pleased or sad, angry or pained. The influence of bodily changes on mental conditions is seen by the effect on our feelings of hunger and repletion, fatigue, rest, cold and warmth, bodily disease, sleep, and old age. A man in health wakes in the morning flushed with energy and spirits, his breakfast confirms this state, the mental powers are at their maximum, gradually fading as the nutrition is used up, but renewed again by rest and refreshment; the memory ebbs and flows with the bodily state, vigorous when we are fresh, sluggish when fatigued, and at the end of the day languor develops and fades into the unconsciousness of healthy sleep.

* Paper read at Bethlem Hospital at the Quarterly Meeting of the Medico-Psychological Association, May 15th, 1890.

Those who fancy that trains of thought have little dependence on the bodily organs should reflect on such facts as these: if, when engaged in any bodily operation, an interesting thought presents itself to us we stop and remain at rest until the excitement is over; cogitations induce some bodily attitudes which painters seize hold of as the outward expression of thought; if certain bodily conditions were not requisite to the intellectual functions, why should sleep do away with all thought except the incoherency of dreaming?

By the law of Relativity, *a change of impression is necessary to our being conscious*, and it is well known that an unvarying action on any of our senses has often in time the same effect as no action at all; we are not conscious of the pressure of the atmosphere; the feeling of heat is the result of a transition from cold, the sensation of light supposes a transition from darkness or shade, the blessings of rest and retirement are only pleasant by their contrast with toil and excitement; the incessant demand for novelty and change proves the power of this law in all the provisions for enjoyment. The nerve fibres and corpuscles on being stimulated undergo change and gradually become exhausted, and in consequence need repose. By the law of Novelty the first moments of a stimulus are the most vivid, and no second shock, whether of pain, pleasure, or mere excitement, is ever fully equal to the first, notwithstanding that ample time may have been given for the exhausted nerves to recover themselves. The nervous system should therefore be duly refreshed by repose and nourishment, and never pushed on any occasion or in any part, to the extreme limits of exhaustion. The principle that regulates feeling in general is liable to considerable modification according as the feeling assumes the character of either pleasure or pain, and these two are mutually destructive like cold and heat; the one is allied to an increase and the other to an abatement of all the vital functions; there is the animation, stir, and vigour of the one, and the depression and collapse of the other. The mental effect of diminished power in the various organic functions produces ultimately some failure in the brain itself, and examination of the organic functions proves conclusively that in a pleasurable mood they are reversed in efficiency; respiration is more rapid, pulse stronger, digestion exalted, and we see in especial prominence the union of mental delight and bodily energy. In depression all is reversed. When there is an accession of nervous power, the body is erect, the features open, the voice full, all proving that the extensor muscles are

strongly stimulated, while in depression there is a relaxation of the muscles—hence a general stooping and collapse of the figure. The law just illustrated is the law of Self-Conservation, because if it did not exist the system could not be maintained: we follow pleasure and avoid pain, but if pain was wholesome and pleasure injurious we should soon incur entire shipwreck of our vitality, as we sometimes do through tendencies that are exceptional to the ordinary law. The mere presence of blood does not evoke full nervous activity; for this it is necessary that the nerves be stimulated, and this stimulation, when in the proper degree, is pleasurable; to pass the limit is always painful. All *conflicting* and *intense* stimulations induce pain by wasting vital power, lowering the mental tone, and momentarily exhausting the power of the nerves implicated. To obtain the best results from pleasure it should be *voluminous*—moderately affecting a large sensitive surface, as we observe in change and variety, the stimulation being multiplied, and no one part pushed to exhaustion. It is, however, unnecessary to probe deeper into the system of complicated dependence of mind and body.

All our asylums are admirably organized in respect of outdoor work, and the several superintendents recognize its great value. "In County Asylums I believe an advance of real value from a curative point would result from an introduction of a larger number of day labourers, to whom convalescents and harmless patients could be entrusted during working hours, so that a class of work which would entail a greater call on the intelligence could be effected. At present in many asylums our patients are worked too much in large groups, and have a tendency to get into a stupid, morose, and automatic condition, which should be avoided" (Dr. Campbell). Again, "The patients are involuntary inmates, their liberty is curtailed, their treatment is prolonged—in many cases for years—their associations are naturally depressing, and their minds only too ready to take their cast from their surroundings—the melancholics contemplating suicide, and the excitable to be thrown on their own turbulent resources. The least we can do then is to make the wards as cheerful as possible, and to impart as much interest as possible into the daily life of the asylum" (Dr. Cassidy). The Commissioners state that "to devise suitable work and effective inducements to engage in it requires much thought, trouble, and ingenuity . . . not much less important than employment is regular, sufficient, and varied exercise. It is now the rule to arrange for giving extended

walks rather than confine the patients wholly to the airing-courts, where they saunter about in a listless manner, or crouch in corners." At the outset, patients, like other people, have an aversion to do anything, however much it may be to their benefit, but a little judicious advice, coaxing, and example will soon overcome all difficulties. In this country it is hardly requisite to point out the advantages that are to be gained from sports, which afford healthful exercise in the open air, the love of such pastimes being a sort of passion, the young and middle-aged being equally possessed of it; and the aim of this paper is merely to suggest that cycling, which has largely gained ground during recent years, be added to the list of out-door amusements indulged in by the inmates of an asylum.

In exercise we have arterial blood changing its condition to venous; this is due to chemical change, and chemical change means heat, and by heat the sweat glands are stimulated to act freely. A second result is that breathing is quickened and the diaphragm acts directly as a stimulus to the kidneys, liver, and stomach, so that it is not so much the shaking of the body which acts on the liver as the quickening of breathing. Any observant man who once gets into the habit of taking exercise that makes him sweat soon finds what a wonderful secret it is of health and happiness. The more work the skin does the less remains for lungs, liver, and kidneys. It clears the head, as anyone knows who works hard up to the time of taking exercise and begins again after. How many gloomy thoughts and brooding cares have been dismissed by its genial working! How it purifies a man's views of life and leaves the body in a tranquil condition ready for mental labour, nourishment, or soothing sleep! "The simple fact that the muscles exist for the purpose of fulfilling the commands of the nervous system might of itself lead to the inference that a healthy mental stimulus ought to be considered as an essential condition or accompaniment of exercise. Hence the superiority, as exercises for the young, of social and inspiring games, which, by their joyous and boisterous mirth, call forth the requisite nervous stimulus to put the muscles into vigorous action, and hence the utter insufficiency of the dull and monotonous daily walk" (Combe). If the will compels the muscles to work, while the nerves are not naturally stimulated, fatigue indeed will result, but fatigue alone is not the object of exercise, otherwise an hour on the treadmill would be as healthy as a run on a cycle. It is absurd to think that a walk with a friend

—perhaps a little better than a walk without—along a road you have been over 100 times can give the required relief, as exercise, which absorbs the thoughts and rivets the attention. They talk about the same work that has been occupying their thoughts for the last week and repeat the self-same jokes. If it is monotony that makes their daily routine dangerous, their very recreation only adds to the danger and does not diminish it; it is a miserable waste of time in many cases, and being a mere exposure to the weather, may do mischief where good was intended. However, a walk, though dull, is better than remaining indoors, and it may at any rate warm the feet and quicken the circulation.

Rushing through the air at 12 miles an hour, will lift the gloomiest thoughts from the mind, be it only for a short period, and what torpidity of soul is not surmounted by the continuous, delicate interaction of nerve and muscle! Physiology teaches the general fact that mental actions repose upon a nervous power, sustained, like every other power, by nutrition, and having its alternations of exercise and rest. It also informs us that, like every other function, the plasticity may be stunted by inaction, and impaired by over-exertion. The human body is a great aggregate of organs or interests—digestion, respiration, muscles, senses, brain. When fatigue overtakes it the organs generally suffer, when renovation has set in the organs generally are invigorated. To increase the plastic property of the mind you must nourish the brain, and you naturally expect that this result will ensue when the body generally is nourished, and so it will if there be no exorbitant demands on the part of other organs, giving them such a preference as to leave very little for the organ of mind.

The object of the following remarks is to discuss the question of cycling purely in its relations to health. No attempt will be made to give a history of its growth from the “dandy-horse” and “bone-shaker” to the roadster, racer, tandem, and sociable. A knowledge of cones, balls, spoon or band brakes, of steering and gearing, although practically useful, has little direct bearing on the hygienic aspect of this pursuit, with which alone we are here concerned.

When the ordinary non-cycling observer sees a rider on a bicycle gliding quietly along a bit of smooth roadway with apparently the least possible expenditure of muscular power, he is apt to believe that speaking of bicycling as “exercise” in the ordinary acceptation of the term is to be guilty of culpable exaggeration. “Such a description,” he will exclaim,

“may be tolerated in the mouth of an enthusiast, but it is opposed to common sense;” or, if he meets another rider whose legs move up and down with furious and demonstrative persistence like “animated pistons,” he will credit the rider with a large amount of expended energy, but he will be inclined to suggest that bicycling exercises only the legs, and that on this account it falls far short of the standard of ideal exercises. This view is a common and a very natural one, but it is utterly fallacious, and the fallacy arises from ignoring one most essential feature of the exercise, and to this feature we will now call attention.

Those cyclists who have a sufficiently vivid recollection of their “learning” stage will admit that the task was a severe physical one, and that the feeling of fatigue was not confined to the legs alone, but was co-extensive with the whole body. The main feature of the exercise is not so much the *propulsion* of the machine as the *balancing* of it—the adjustment of the body in its application of motive power in such a manner as to secure an equal distribution of its weight on each side of the direct line of motion. It would be difficult to find any other pastime in which such a *thoroughness* of bodily exercise is attainable, and it is this very fact which constitutes its chief danger, for it is comparatively easy to reach the stage of fatigue without being aware of it. Owing to the exhilaration produced, the rider does not perceive he is getting tired, and the stages at which healthy fatigue becomes weariness, and weariness exhaustion, follow each other more rapidly than in any other exercise, but if discretion and care be adopted this can easily be prevented. In the case of tricycling, the special feature of the *balance* and other considerations arising therefrom do not enter so prominently into the question, but in one respect it may be thought to be the more severe work of the two, as the weight to be driven is heavier, and there is greater friction; on the other hand, tricycling is attended by less personal danger, the rider can slacken up, rest at any moment without the fatigue of dismounting, and he can carry more luggage.

For any exercise to take a really high rank, it is requisite that it should be taken in the open air, and in this respect few, if any, can approach cycling. In the gymnasium the exercises are more exhausting than those of road, river, or field, because of the inferior conditions of “diffusion” of air under which they have to be performed. There is an infinitude of hygienic distance between an air which is capable of bestowing the greatest amount of possible good, and one which only passes

muster as innocuous, and that form of pursuit is the healthiest which ensures the most rapid passage through it. The terms "bracing, relaxing, and change" of air are household words with us, and the cyclist can more readily procure them than anyone else. A very slight alteration in levels, soils, or geological formation will frequently effect as great a contrast in the character of the air at 10 miles distance as at 100, and a quiet day's ride may often prove more efficacious as well as more economical, than a fortnight at a fashionable watering place, thus enabling the daily struggles of the constitution, with its environment, to be carried on with a fair measure of success. In our composite nature, mind and body react upon each other with such a nicety of associated influences, that there is always a strong *à priori* presumption against the success of any system which fails to secure a due consideration for both. Health is not merely a matter of muscles, sinews, and lungs—a dull monotonous exercise can never be health-giving; time must not only pass, but it must pass pleasantly and briskly; each muscular movement must be associated with a purpose which gives a stimulus and zest to the whole performance. A walk may often be a dull affair, the fixed natural objects passed may be too familiar to the walker, who, from the comparatively limited area at his command, has of necessity to traverse the same ground; variable objects, animate and inanimate, do not present themselves with sufficient rapidity to break the spell of monotony. The cyclist, however, need never find his ride dull—he has a larger range at his command, the number of objects of interest he passes is multiplied by his pace, and the mind is supplied with a constant succession of occasions for pleasant observation. Should he be in the habit of making an extremely familiar round, loose stones, ruts, and the thousand and one features which distinguish an ordinary highway from an asphalt track will at any rate keep his attention sufficiently engaged to prevent the weariness arising from absolute vacuity. Companionship undoubtedly lends a great additional charm; it is pleasant at the end of the day to be able to talk over the scenes and incidents of the ride with one who has been an actual participator in them.

It is impossible to over-estimate the value of any out-door exercise which proves itself both suitable and attractive to women, and there is nothing whatever in the nature of the exercise to render the use of the tricycle of more service to one sex than to the other, whereas the greater degree of confinement in the asylum to which the female patients are necessarily

subjected, and the more restricted number of out-door exercises which are open to them, render it all the more important that this recent addition to the list should receive full and general recognition. In a recent number of the *Asclepiad*, Dr. Richardson says, "I do not recall seeing any special functional injury of the muscles as a result of cycling. I never knew cramp or spasm as a direct result. I have never heard of rupture of muscles or of the fascia surrounding them, not even when they have been most tired. Sprain, which is a common accident from many exercises, is most uncommon as a result from working the machine when it is separated from collisions and falls, with which I have at this moment no concern. I have never met with a single instance in which I could trace the common accident of rupture or hernia to the exercise, although in the first days of cycling this accident was named as one which would of itself, from its frequency, put the exercise out of the field in a very short time." The great point is the necessity for caution in not over-doing it. Accidents may occur, of course. Those that are due to some vibrating shock starting a hidden flaw in the steel are extremely rare, and hardly deserve notice, but can be guarded against by getting the best machine from the best makers. Others occur through lack of experience, and are to be prevented by the acquisition of greater skill. A machine has been brought out which is capable of carrying any number from 1 to 20, and is readily convertible to suit any lesser number than the maximum for which it is built; it is well-supplied with brake power, each pair of wheels having a brake. The riders are mounted in single file, the advantages of this arrangement being (1) that it becomes more manageable; (2) that power for power it presents less surface to a strong headwind, one of the most difficult obstacles for cyclists to overcome. The whole control and steering is in the hands of one man, and in the most densely crowded thoroughfare there is little apparent difficulty in managing the machine, as it turns easily in less space than a hansom needs. Ten miles an hour would be considered a low average rate, and sixteen have been easily accomplished; the cost for each rider is about 14 guineas. Whatever be the sex of the riders, the recognized rule of the company riding should always be that the weakest member of the party is to be the absolute arbiter of pace and distance—not, indeed, in his or her own person (for there will always be an anxiety to disprove this assumption of inferior strength), but that the responsible leader or organizer of the ride should always take the powers

of the weakest as his standard of measurement. Though we have already indeed been introduced to an embryonic form of amphibious cycle capable of adapting itself to ploughing the pathless waste of the ocean, or dinting the public highway, it will not serve the present purpose to enter into such speculations, but it may be mentioned that an aerial bicycle has been invented and tried successfully, the cost of each machine not being more than £20.

For most of us the exquisite loveliness and delight of a fine summer's day have a special charm. The very life is luxury. The air is full of sound and sunshine, of the song of birds, and the murmur of insects; the meadows gleam with golden buttercups, we almost fancy we can see the grass grow and the buds open; the bees hum for very joy; there are a thousand scents, above all, perhaps, that of new-mown hay. There are doubtless many patients before whom "all the glories of heaven and earth may pass in daily succession without touching their hearts or elevating their minds," but, in time, it is possible even these would, by means of cycling, have their love of Nature, which had been frozen or crushed out, restored. Thus all Nature, which is full of beauties, would not only be a never-failing source of pleasure and interest, but lift them above the petty troubles and sorrows of their daily life.

*The Propagation of Insanity and Allied Neuroses.** By S. A. K. STRAHAN, M.D., L.R.C.P., Barrister-at-Law, Assistant Medical Officer, County Asylum, Northampton.

For the past thirty years our insane population, as recorded in the annual Reports of the Commissioners in Lunacy, has steadily increased at the rate of over 1,500 a year, until in December, 1888, it had reached the alarming total of 84,340. Nor can even this large total be taken as at all fully representing the number of our insane. According to the census returns in 1871, the Commissioners' figures represented only 82.1 per cent., and in '81 only 86.5 per cent. of those returned as idiotic and insane; and when we remember that the census returns were made by fathers and heads of families more likely to under than overstate the numbers of afflicted in their households, we may venture to estimate that at present our insane population is fast approaching the enormous total of 100,000.

* Paper read at the Quarterly Meeting of the Medico-Psychological Association, held at Bethlem Hospital, May 15th, 1890.