Puberty and adolescence medico-psychologically considered / by T.S. Clouston.

PUBERTY AND ADOLESCENCE

MEDICO-PSYCHOLOGICALLY CONSIDERED.

BY

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When one considers the enormous differences in the physiological life and prevailing brain activity of the same human being at the different periods of life, it does not seem wonderful that each period has its own type of psychological disturbances, just as it has its special kinds of ordinary disease. Indeed, it would be very wonderful if the brain of a child, whose chief characteristics are active development, intense inquisitiveness in all directions, great sensitiveness to impressions, which succeed each other rapidly, and, whether they are painful or pleasurable, leave only slight lasting traces, if this organ manifested quite the same disturbances when its mental functions become deranged as the brain of an old man, whose chief characteristics are retrogression in all its activities, and insensitiveness to ordinary impressions. The essential qualities of the two organs are in many respects different; their receptive, dynamical, and trophic activities are quite dissimilar. Then what a change in the mental activity of the brain does the period of puberty cause! Looking at the matter from the combined point of view of physiologists and psychologists, we must connect the new development of the affective faculties, the new ideas, the new interests in life, the new desires and organic cravings, the new delight in a certain sort of poetry and romance, with a new evolution of function in certain parts of the brain that had lain dormant before. This awakening into intense activity of such vast tracts of encephalic tissue, though provided for in the evolution of the organ, does not take place without much risk of disturbance to its mental functions, especially where there is an inherited predisposition in that direction. And if this predisposition is thus developed into actual derangement of function, it happens, as might have been surely predicated *a priori*, that the type of derangement is much influenced by the great function of the reproduction of the species then arising *de novo*. To form a right conception of the kinds of mental disease that occur at the various important periods of life it is essential that we consider

them in connexion with the normal changes that take place in the organism at these periods, with the normal modifications in the mental energy at those periods, and with the changes that take place in the brain texture and mode of action, so far as we know them. In short, we must take a physiological view of mental disease.

The Period of Puberty or Pubescence.—The period of puberty is the next great physiological era in the life of man after that of birth. Before that occurs the whole trophic and mental energy has been occupied in acquisition alone. There has been no production. Before that time there has been a general psychical likeness between individuals of the same and of opposite sexes which then rapidly disappears. Individualities of all kinds spring up far more decidedly at that time in those of the same sex; while, dividing the sexes at this time, there arise most striking psychical differences that far exceed the bodily contrasts. Up to that time the mental development towards the ideal standard of psychical energy has been very equal in either sex; after puberty that development takes place in the man far more in the direction of energizing and cognition, in the woman in the direction of emotion and the protective instincts. But these changes don't ordinarily take place all at once in the human species, any more than a full capacity for reproduction takes place in either sex immediately the testes assume their function, or menstruation and ovulation are set up. It takes several years for the full development of the size and form of the body that is normal and typical for each sex, and it takes still longer for the complete evolution of the masculine and feminine psychical characteristics. It is not at the time of the first appearance of the reproductive function chiefly that there is peril to the healthy mental balance, but those years of gradual coming to maturity are full of danger to the mental health of both sexes. It cannot be otherwise. The hereditary influences and tendencies that all the former generations have transmitted to a man come then most fully into play. And when we consider for a moment that it is not only his father's and his mother's own inherited tendencies that may come to him, but their acquired peculiarities as well, and not only so, but the inherited and acquired peculiarities of his four grandparents and his eight great-grandparents, not to go any further back, how great a risk does every man and woman run of suffering for the sins of their fathers! Maudsley speaks of a man's yielding to the tyranny of his organization. We might go further, and say he may fall a victim to his grandfather's excesses. Most fortunately for the race, there are other laws obviating such effects of heredity. One is that the tendency towards reproducing the normal and healthy type is always stronger than towards the abnormal. If the conditions of life are favourable, mere tendencies never develop, and potentialities never become actualities. The other is, that when the ten-

dency to abnormality is strong the victim of it dies before the age of reproduction, or he is incapable of procreation. Now, the insanity of puberty is always a strongly hereditary insanity; it, in fact, never occurs except where there is a family tendency towards mental defect or towards some other of the neuroses. Its immediate cause may be some irregularity in the coming on of the reproductive or menstrual function; its real and predisposing cause is heredity, having for its object this higher physiological law, that the reproduction of the species is stopped when the inherited tendency to brain disease acquires a certain strength in any individual.

I cannot help here adverting to the absurd and unphysiological theories of education which are sometimes taught, and which we as medical men should combat with all our might. The old practice of attending to the acquisitive and mnemonic faculties of brain alone in education is now fortunately giving way. The theory of any education worth the name should be to bring the whole organism to such perfection as it is capable of, and to train the brain power in accordance with its capacity, most carefully avoiding any overstraining of weak points; and an apparently strong point in the brain capacity of a young child may in reality be its weakest point from hyper-activity of one part. I have known a child with an extraordinary memory at eight who at fifteen could scarcely remember anything at all. Then, as the age of puberty approaches, one would imagine, to hear some scholastic *doctrinaires* talk, that it was the right thing to set ourselves by every means to assimilate the mental faculties and acquirements of the two sexes, to fight against nature's laws as hard as possible, and to turn out psychically hermaphrodite specimens of humanity by making our young men and women alike in all respects, to make our girls pundits and doctors, and our young men mere examination-passers. If there is anything which a careful study of the higher laws of physiology in regard to brain development and heredity is fitted to teach us, it is this, that the forcing-house treatment of the intellectual and receptive parts of the brain, if it is carried to such an extent as to stunt the trophic centres and the centres of organic appetite and muscular motion, is an unmixed evil to the individual, and still more so to the race.

Some educationalists go on the theory that there is an unlimited capacity in every individual brain for education to any extent, in any direction you like, and that after you have strained the power of the mental medium to its utmost, there is plenty of energy left for growth, nutrition, and reproduction. Nothing is more certain than that every brain has at starting just a certain potentiality of education in any one direction and of power generally, and that it is far better not to exhaust that potentiality, and that if too great calls are made in any one direction it will withdraw energy from some other portions of the organ. These persons forget that

the brain, though it has multiform functions, yet has a solidarity and interdependence through which no portion of it can be injured or exhausted without in some way interfering with the functions of the other portions. Even the very anatomical and histological composition of the organ might teach us this. The way in which its several elements that minister to mental functions, motion, sensation, regulation of temperature, and nutrition, are mixed up in the cortex, and even in the centres lower down, have as yet defied our anatomical and physiological investigations even to distinguish the one clearly from the other. To say that any one man could have the biceps of a blacksmith, the reasoning powers of a Darwin, the poetic feeling of a Tennyson, the procreative power of a Solomon, and the longevity of a Parr, is simply to state a physiological absurdity. As Mr G. H. Lewis[1] says, "Owing to the action and reaction of blood and plasmode, of tissues on tissues, and organs on organs, and their mutual limitations, the growth of each organism has a limit, and the growth of each organ has a limit. Beyond this limit no extra supply of food will increase the size of the organism, no increase of activity will increase the (power of) the organ,—'Man cannot add a cubit to his stature.' The blacksmith's arm will not grow larger by twenty years of daily exercise after it has once attained a certain size." The possible extent of development of every brain and of every function in any one brain is just as much confined by limitations as the size of the blacksmith's arm, and physiology teaches us that no organ or function should be worked even up to its full limit of power. No prudent engineer sets his safety-valve just at the point above which the boiler will burst, and no good architect puts weight on his beam just up to the calculation above which it will break. Nature generally provides infinitely more reserve power than the most cautious engineer or architect. She scatters, for instance, seeds in millions for hundreds to grow, and she is prodigal of material and strength in the heart and arteries beyond what is needed to force the blood-current along; therefore we have no reason to think that any function of the brain should be strained up to its full capacity except on extreme emergencies, or that any of the receptive or sensory brain-tissues should be stored choke-full of impressions for the purpose of being frequently called up again as representations. Especially do those principles apply if we have transmitted weaknesses in any function or part of the organ; and what child is born in a civilized country without inherited brain weaknesses of some sort?

These principles also apply, I believe, most strongly to the whole reproductive functions of the body and its centres in the brain, both in the male and the female. Especially are they applicable in the case of the female organism, on which the chief strain of reproducing the species rests. The risks to the mental

[1] *Physical Basis of Mind*, p. 184.

functions of the brain from the exhausting calls of menstruation, maternity, and lactation, from the nervous reflex influences of ovulation, conception, and parturition, are ruinous if there is the slightest original predisposition to derangement, and the normally profound influences on all the brain functions of the great eras of puberty and the climacteric period are too apt, in these circumstances, to upset the brain stability. Beyond all doubt, boarding-school education has not as yet been conducted on physiological principles, and is responsible for much nervous and mental derangement, as well as for difficult maternity; but if the education of civilized young women should become what some educationalists would wish to make it, all the brain energy would be used up in cramming a knowledge of the sciences, and there would be none left at all for trophic and reproductive purposes. In fact, for the continuance of the race there would be needed an incursion into lands where educational theories were unknown, and where another rape of the Sabines was possible. American physicians tell us that there are some schools in Boston that turn out young ladies so highly educated that every particle of their spare fat is consumed by the brain-cells that subserve the functions of cognition and memory. If these young women do marry, they seldom have more than one or two children, and only puny ones at that, whom they can't nurse, and who either die in youth or grow up to be most feeble-minded folks. Their mothers had not only used up for another purpose their own reproductive energy, but also most of that which they should have transmitted to their children; nature, no doubt, making provision for the transmission of the unused-up energy of one generation on to the next, on the principle of the conservation of force. As physicians—the priests of the body and the guardians of the physical and mental qualities of the race—we are, beyond all doubt, bound to oppose strenuously any and every kind and mode of education that in any way lessens the capability of woman for healthy maternity, and the reproduction of future generations strong mentally and physically. The relation of the psychical and emotional development to the generative function is full of interest and importance to us as physiologists, and few men have been long in practice before such questions obtrude themselves as very practical ones indeed. The first hysterical girl a man has to treat in a good family where he does not want to lose the case or the family practice, may test severely his knowledge of the reflex relationship of the uterus with the sensory, motor, and mental functions of the brain. We must, as much as we can, account for phenomena of all kinds. It is a mere cloak for ignorance, and an excuse for not thinking, to call certain abnormal phenomena "hysterical," and imagine that explains them. It does not require much consideration to see that at the period of puberty in both sexes, but especially in the female, the direct connexion of certain physiological

functions and processes with certain mental facts influences the whole life of the individual. If that connexion is in any way abnormal, we have great strains on the mental functions of the brain, and sometimes actual derangement. Our high civilisation and refinement, no doubt, add immensely to the risks by increasing the strain. The psychological analysis of what female modesty is, by a physiologist, reveals the transformation and apotheosis in the higher regions of the brain of reflex impressions from the reproductive organs into a high moral quality, not only beautiful, but absolutely essential to social life. How can a physician understand the true import of the obtrusive and grotesque modesty of a hysterical patient except he takes this into account? The intense and complete outward repression and inhibition of certain physiological cravings required by our morals and our civilisation causes, no doubt, a dangerous strain on the brain functions, and a reaction in other directions, where there are hereditary neurotic weaknesses.

Puberty is the first really dangerous period in the life of both sexes as regards the occurrence of insanity; but it is not nearly so dangerous as the period of adolescence, a few years afterwards, when the body, as well as the functions of reproduction, have more fully developed. The nutritive energy of the brain is so great in youth, its recuperative power so vigorous, and its capacity for rest in sleep so powerful, that its mental functions are not often upset at this period. To bring out this fact statistics are useful. In Scotland, at the present time, nearly one-half the population are under the age of 20; while in the Royal Edinburgh Asylum we have, out of a total of 730 patients, only 10 under that age. The contrast between 50 per cent. and 1·5 per cent. in the sane and insane populations is a very marked one. But, to show how different is the state of matters in the older periods of life, let us compare the number of persons over 60 in Scotland and in the Asylum. In the general population there are just about 8 per cent. over that age, while in the asylum, out of the 730, there are no less than 126, or 17 per cent. Or, to bring out the facts differently, it is found that the number of people so insane as to require to be sent to asylums is about one in 600 of the population. Now, at this rate our 730 inmates represent an ordinary population of 438,000. One-half of these, or 219,000 persons, are 20 years of age or under, and they have only supplied ten of our lunatics, insanity occurring in them at the rate of only one in 21,900, while the remaining half of the general population, that over 20, had produced 720 lunatics, or one in 304, that is, in seventy times the proportion of those under 20 years of age. After the age of 20 there is no such enormous disproportion in the production of lunacy. It is undoubtedly most frequent between the ages of 35 and 55. Speaking generally, therefore, insanity in its worst forms is not a disease of youth or puberty, but of middle and

advanced life. Slight attacks of nervous and mental derangement, however, that do not require asylum treatment, are by no means uncommon in those predisposed to the neuroses at the earlier ages, especially in the female sex; and if the general health and strength and nutrition are poor, puberty is very apt to cause neurotic symptoms in those cases. Such symptoms, if there is an inherited predisposition to insanity, should by no means be despised. They may develop into actual insanity at a later period. For the production of decided insanity requiring asylum treatment at the age of puberty we must, as I said, have a strong neurotic predisposition, as well as the advent of the reproductive era and the changes it brings along with it. I have scarcely ever met with a case without this. Other affections of the nervous centres are very apt to appear at this period of life, notably the two great derangements of the motor centres, epilepsy and chorea. The motor centres are, no doubt, more unstable and easily upset in their working in youth than either the mental, sensory, or trophic centres. Infantile convulsions are *the* nervous disease of infancy. I believe that if there is a hereditary predisposition to any neurosis whatever in infancy, it nearly always shows itself in a special tendency to infantile convulsions during dentition. We find that the majority of cases of epilepsy and chorea in the female begin at the period of puberty. The insanity of puberty in both sexes is characterized especially by motor restlessness. Such patients never sit down by night or day, and never cease moving. There is noisy and violent action, sometimes irregular movements, or, in the few melancholic forms and melancholic stages of the maniacal cases, cataleptic rigidity. The mental symptoms consist most frequently of a kind of incoherent delirium rather than any fixed delusional state. In boys the beginning of an attack is frequently ushered in by a disturbance in the emotional condition, dislikes to parents or brothers or sisters expressed in a violent, open way; there is irrational dislike to and avoidance of the opposite sex. The manner of a grown-up man is assumed, and an offensive "forwardness" of air and demeanour. This soon passes into maniacal delirium, which, however, is not apt to last long. It alternates with periods of sanity, and even with stages of depression.

Adolescence.—The mental disturbance characteristic of this period is closely allied to that which occurs at puberty. It occurs later, between the ages of 18 and 25, notably between 20 and 25, when the function of reproduction is attaining its full development and the body is arriving at its full growth. That there is such an era in life physiologically is sufficiently proved by the existence in all languages of a word to signify the same thing as our "adolescence." I cannot hope to change the accepted meaning of the present nomenclature, but I would, if I could, distinguish between puberty and adolescence in this way—I should restrict puberty, as is now done when the term is used in a scientific and

physiological sense, to the initial development of the function of reproduction, to its first appearance as an energy of the organism; while I should use adolescence to denote the whole period of twelve years from the first evolution up to the full perfection of the reproductive energy, when the bones are all finally consolidated, and the full growth of the beard and the sexual hair, and the perfect assumption of the manly form in the male sex, and the full development of the adipose tissue and the mammæ give the female form its perfect grace of contour.

"Dr Matthews Duncan has proved statistically that in the female sex 'the climax of initial fecundity,' which may be taken as proof of full development 'is about the age of twenty-five years.'[1] This may be assumed to be the case for both sexes.

"Looked at from a psychological point of view, it cannot be denied by any one that the latter years of adolescence are far more important than the first. For years after puberty boys and girls are still boys and girls in mind, but as a physiological fact the female sex attains its full bodily development first. At twenty-one the great majority of that sex have attained perfect physiological development, and Duncan's statistics show that their initial fecundity is then almost at its climax. But this is not so in the male sex. The growth of the beard and the form of the body do not reach full development in that sex on an average till the age of twenty-five. Mentally the difference is still more marked, I believe. The subtle but profound mental influences of adolescence have usually reached their full maturity in women three or four years before men."[2]

A careful study of human nature will soon show any observer that the period of adolescence in this sense is a most momentous one. The mental change that takes place from 18 to 25 is incomparably more important, and I think more interesting psychologically too, than that which occurs between 14 and 18. The psychological change at puberty is, no doubt, great from childhood; but it is inchoate and nascent; it wants precision and conscious power; its emotionalism is utterly spasmodic and childish; its sentiment altogether wants tenderness, and its ambitions and longings are mere castle-building in the air.

At adolescence in the male sex life first begins to look serious, both from the emotional side and in action. It is then only that childish things are put away. For the first time literature in any correct sense is appreciated. Poetry, not even understood before, now becomes a passion, at least certain kinds of poetry. Not that the highest kind of literature is reached. No adolescent ever really appreciated, or even thoroughly liked, Shakespeare. That is reserved for full manhood. The kind of novel that is enjoyed is always a good test of the mental and emotional development. The boy enjoys Ballantyne and Marryat; G. P. R. James begins to have a dim meaning to the youth; at puberty the adolescent takes to Scott, Dickens, and Miss Austin; while only the man enjoys and understands Shakespeare, George Eliot, and Thackeray. Go into

[1] *Fecundity, Fertility, and Sterility*, 2d ed. p. 33.

[2] See July number, 1879, "The Study of Mental Disease," by the author.

a university and watch the demeanour of the first and fourth year's man, if any one has any doubt as to the immeasurable distance between puberty and adolescence. There seems to be a great gulf fixed between them. The fourth year's man treats his junior not as a mere junior, but as of a different and inferior species. He never speaks to him if he can help it; he would no more room with him than he would with a baby in arms. Watch the two in the presence of the opposite sex. Their behaviour is quite different. In the one case you see mere shyness, that breaks out into rollicking fun the moment a real acquaintance is formed; in the other there is real sexual egoism, that most painful pleasure that consists of the half unconscious organic feeling that each person of one sex is an object of the most intense interest to each person of the opposite sex about the same age. The real events and possibilities of the future are reflected in vague and dreamlike emotions and longings, that have much bliss in them, but not a little, too, of seriousness and difficulty. The adolescent feels instinctively that he has now entered a new country, the face of which he does not know, but yet that is full of possibility of good and happiness for him. He has a craving, too, for action of some sort—not merely the football action of the boy, but something of more serious import. Longfellow's youth that vaguely cried "Excelsior" was evidently at this stage of life. His reasoning faculty first gets some backbone at this period. His emotional nature acquires for the first time a leaning towards the other sex that quite swallows up the former emotions. It is not yet at all under his control, fixed or definite in its aims. His sense of the seriousness and responsibility of life may be said to awake then for the first time in a real sense. The first sense of right and wrong and of duty becomes then more active instead of passive. He has yearnings after the good, and is capable of an intense hatred and scorn of evil which he could not have experienced before.

But it is in the female sex that the period of adolescence has attracted most attention, especially among those psychological students and delineators of character, the novelists of the day. As physicians, we know that it is only then that hysteria, migraine, and the graver functional and reflex neuroses arise. As men of the world, we know that the love-making, the flirting, the engagements to marry, and the broken hearts of the adolescents are not really very serious affairs. The cataclasms of life don't happen then. We know that no artist ever painted, or no sculptor ever modelled, a Venus who had not passed adolescence. The very finest and most interesting study of adolescence in the female sex is, in my opinion, to be found in the Gwendolen Harleth of George Eliot's novel of *Daniel Deronda*. This authoress is by far the most acute and subtile psychologist of her time, and certainly the character I have mentioned is most worthy of study by all physicians who look on mind as being in their field of study or sphere of

action. From the time when, at the gaming-table, Gwendolen caught Deronda's eye, and was totally swayed in feeling and action by the presence of a person of the other sex whom she had never seen before, playing, not because she liked it or wished to win, but because he was looking on, all through the story till her marriage, there is a perfect picture of female adolescence. The subjective egoism tending towards objective dualism, the resolute action from instinct, and the setting at defiance of calculation and reason, the want of any definite desire to marry, while all her conduct tended to promote proposals, the selfishness as regards her relations, even her mother, and the organic craving to be admired, are all true to nature. Witness her state of mind when Grandcourt first appeared:—

"Hence Gwendolen had been all ear to Lord Brackenshaw's mode of accounting for Grandcourt's non-appearance; and when he did arrive, no consciousness was more awake to the fact than hers, although she steadily avoided looking towards any point where he was likely to be. There should be no slightest shifting of angles to betray that it was of any consequence to her whether the much-talked-of Mr Mallinger Grandcourt presented himself or not. And all the while the certainty that he was there made a distinct thread in her consciousness."

Again:—

"Gwendolen knew certain differences in the characters with which she was concerned as birds know climate and weather."

The sentimentality of this period of life is well illustrated when Gwendolen says—

"'I never saw a married woman who had her own way.' 'What should you like to do?' said Alex, quite guilelessly, and in real anxiety. [He was an adolescent just entering on the period.] 'Oh, I don't know! Go to the North Pole, or ride steeplechases, or go to be a queen in the ball, like Lady Hester Stanhope,' said Gwendolen, flightly. 'You don't mean you would never be married.' 'No, I didn't say that. Only, when I married, I should not do as other women do.'"

The inchoate religious sentiment, as a psychological faculty contending with the egoism, is thus brought out:—

"What she unwillingly recognised, and would have been glad for others to be unaware of, was that liability of hers to fits of spiritual dread. . . . She was ashamed and frightened as at what might happen again, in remembering her tremor on suddenly finding herself alone. . . . Solitude in any wide scene impressed her with an undefined feeling of immeasurable existence aloof from her, in the midst of which she was helplessly incapable of asserting herself. With human ears and eyes about her she had always hitherto recovered her confidence, and felt the possibility of winning empire."

The craving for notice is thus hit off:—"I like to differ from everybody. I think it is so stupid to agree."

"Her thoughts never dwelt on marriage as the fulfilment of her ambition. . . . Her observation of matrimony had induced her to think it rather a dreary state, in which a woman could not do as she liked, had more children than were desirable, was consequently dull, and became irrevocably immersed in humdrum. Of course marriage was social promotion. She could not look

forward to a single life. . . . She meant to do what was pleasant to herself in a striking manner ; or rather, whatever she could do so as to strike others with admiration, and get in that way a more ardent sense of living, seemed pleasant to her fancy."

But extracts merely spoil the whole picture, which is one that is in perfect accord with the facts of nature, drawn by a consummate artist. It is one of the most perfect psychological studies with which I am acquainted.

It seems like passing from the poetry of science to Dryasdust's details, to descend from George Eliot's word-pictures to the details of physiological fact and speculation that underlie all this charming maiden's mental constitution. I think most medical men of extensive observation would agree with me, that the incompleteness of those mental tokens of merely developing womanhood and manhood during the period of adolescence do indicate that the conditions under which the reproduction of the species takes place should be deferred till adolescence has passed. The love-making of adolescence is not the serious matter it should be, as Gwendolen's history well shows ; and therefore, the full physiological and psychological conditions for dualism not being there, it should not be encouraged. All serious love-making, engagements to marry, too free intercourse with the other sex, too much dancing, too much going into society, merely tend to force on the full development, like young plants in a hothouse, with the result that the flowers and fruits have a tinge of artificialness, don't last, and don't stand the same tear and wear. A young man who marries before his beard is fully grown breaks a law of nature and sins against posterity. A girl who gets engaged while in Gwendolen's state of mind is not likely to derive all the happiness in marriage of which she is capable. It follows, therefore,—and most members of our profession would, I think, agree with me,—that sexual intercourse should not be indulged in till after adolescence. The period of adolescence is very liable to those psychological cataclasms in weak brains, attacks of mania, that have a special relationship to the function of reproduction. Especially it seems to me that the periodicity and remission of the *nisus generativus* in both sexes, and the menstrual periodicity which accompanies it in females, is reflected in a periodicity and tendency to remission in the insanity that occurs during adolescence. For the statistical results of an investigation into the prevalency, characters, and prognosis of the "Insanity of Adolescence," I must refer to the July number of this journal for 1879 (pp. 19–24).

Treatment of the Insanity of Adolescence.—The treatment I have lately adopted for such cases I endeavoured to found on physiological considerations. The completion of the period of adolescence is in both sexes accompanied by a considerable deposit of adipose tissue, by strength and vigour, and a state of general good nourishment of the body. To attain to this normal condition of body

should undoubtedly be our aim in treating all cases of mental disease at this period. It always seemed to me that there were two things that constantly worked the other way, and that I had to contend against in their treatment. These were the general brain excitability and the morbid strength, and often perversion, of the generative *nisus*. The one tended to mania, sleeplessness, purposeless motor action, thinness, and exhaustion; the other to erotic trains of thought, sexual excitement, and masturbation. I found that inaction, reading, indoor life and amusements increased the one, while novel-reading, solitariness, and long hours in bed aggravated the other, and animal food and alcoholic stimulants gave increased strength to both morbid tendencies. I therefore put my patients to active exercise in the open air for as many hours a day as possible, walking, digging in the garden, wheeling wheelbarrows; give them shower-baths in the morning when the weather is suitable and they are strong enough, and encourage active muscular exercise in every way. Athletic games of all sorts in the open air are certainly good so far as they go. But I place my chief reliance on the diet. Milk in large quantity, and as often in the day as possible, bread, porridge, and broth, are the staple articles of food for such patients here. My friend Dr Keith of this city was the first to direct my attention to the advantage of a light, farinaceous, and milk diet in another class of cases, and my experience is strongly in favour of his views. The patient may have some fish, or fowl, or eggs, but in reality milk is the sheet-anchor of treatment. I never give such cases alcoholic stimulants. I give to all such patients who can take and assimilate it easily an emulsion of cod-liver oil, hypophosphite of lime, and pepsine, made and flavoured in such a way that it resembles cream. I find very few indeed who can't take this. Beyond this, an occasional bitter tonic is about all the medicine I give. The effect of this diet, regimen, and treatment is most marked in the majority of cases. No doubt, during the first part of the attack the patients may lose weight while the excitement is in its most acute stage; but they soon begin to gain weight, and my prognosis is always favourable when I find a patient beginning to gain weight within a reasonable time, say three months or so. I have had patients who, in spite of very sharp excitement indeed and much sleeplessness, gained weight. It seems to me that the process of fattening such a patient, and the condition under which it takes place, are antagonistic to the disease and its results. I have known the stopping of the cod-liver oil to be followed at once by a loss or diminished gain in weight, and its resumption to be followed by the former rate of increase. If a young man or woman suffering under the insanity of adolescence is found to gain one or two pounds a week within the first three months, I look on him as quite safe. I have had a case gain a stone in a month.

I have not pursued this plan of treatment long enough as yet to

yield large statistical results that could be properly relied on, but my impression so far is, that far more of the patients recover. They recover much sooner, and their recoveries are more reliable and permanent. Even in the case of those who sink into dementia, I think they do so more quietly and with less of the element of chronic mania than under a flesh diet. It is, I think, certain that the habit of masturbation, which is so frequent and so deleterious an element in such cases, is less practised by patients on this diet, and, when practised, is less damaging to brain function, and takes less hold on them.

Lastly, in connexion with this subject, I would say a word about prophylaxis in children with a strong neurotic inheritance. My experience is that such children who have the most neurotic temperaments and diatheses, and who show the greatest tendencies to instability of brain, are as a rule flesh-eaters, having a craving for animal food too often and in too great quantities. I have found, also, a large proportion of the adolescent insane had been flesh-eaters, consuming and having a craving for much animal food. My experience, too, is that it is in such boys that the habit of masturbation is most apt to be acquired, and, when acquired, seems to produce such a fascination and a craving that it ruins the bodily and mental powers. I have seen a change of diet to milk, fish, and farinaceous food produce a marked improvement in regard to the nervous irritability of such children. And in such children I most thoroughly agree with Dr Keith, who in Edinburgh for many years has preached an anti-flesh crusade in the bringing of all children up to eight or ten years of age. I believe that by a proper diet and regimen, more than in any other way, we can fight against and counteract inherited neurotic tendencies in children, and tide them safely over the periods of puberty and adolescence.

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