sense, for he interprets the meaning of medical facts just as the judge interprets and decides the law. Such being the theoretical function of the expert, what qualities ought he to possess? In the first place the very term expert implies the possession of special and superior qualifications in point of knowledge and experience. He is not presumed to know everything, however convenient omniscience would be on the occasion of the cross-examination, but he is expected to be fully acquainted with the latest and most exact knowledge of the scientific matters concerning which he testifies.

But the ideal expert must not only know the principles of his science, he must also have a special aptitude in applying those principles to the data which are supplied to him; he must have a judicial mind. He will not jump at conclusions, nor form his opinion till he is master of the facts on which he is to base that opinion. The most successful expert will thrive better by deliberation rather than by intuition.

But he will be cautious in stating his conclusions as well as deliberate in forming them. A really honest purpose will lead him to avoid dogmatism. Every physician of sensibility and intelligence must know the limitations of medical science, and remember how readily the extraordinary knowledge of to-day becomes the ordinary knowledge of to-morrow, how unmercifully the doctrines of the fathers are upset and undermined by the observations of the sons. The conscientious expert will, therefore, be slow to make positive assertions about matters in medical science which require fuller investigation to become settled principles, always recognizing the difference between the possible, the probable, and the absolute.

Finally the expert will be impartial, which is but another way of saying that he will be honest. Properly speaking he is not a witness on either side; he does not testify to facts which form the basis of the judgment; he is not concerned with the result. When he has stated what certain proven facts indicate from the medical point of view his office ends. He is not to answer with regard to the accused, Is he guilty? Is he insane? Those questions are for the jury. "Every witness," says Lord Hatherly, "should eschew altogether the notion of partisanship. He should be ready to give his opinion frankly and unreservedly, regardless how it may tell. He is there not as an advocate, but in order to inform the court and jury to the best of his judgment."

(To be concluded.)

Original Articles.

NEURASTHENIA; ITS CAUSES AND ITS HOME TREATMENT.¹

BY J. S. GREENE, M. D., OF DORCHESTER.

THE word Neurasthenia is here taken, not attempting an accurate definition, to signify that state of exhaustion, reduction, or suspension of available nerve power popularly known as nervous prostration. It is scarcely necessary to add that this is a condition entirely distinct from anæmia, and also from hysteria, though these diseases may be associated with it, and are possibly sometimes mistaken for it.

In the discussion which followed the reading of a paper on Subinvolution of the Uterus and Neurasthenia, before the Boston Society for Medical Observation, about two years ago, Dr. Weir Mitchell said that he preferred to use the term nervous exhaustibility rather than nervous exhaustion. The distinction is obviously a valuable one, but the latter term has a convenience and fitness if used simply as the expression of the ultimate condition whereof the liability or predisposition is signified by the former. In the remarks which follow both terms will be made use of, according to these their primary and natural meanings. It is not only convenient but necessary, in pursuing my subject, to give to the term nervous exhaustibility a wider significance than did the distinguished authority whom I have quoted.

I take this postulate: That it is nervous debility or nervous exhaustion, nerve-tire or neurasthenia, interchangeable terms, or terms standing for varying degrees of nervous disability, with which we as physicians are confronted in individual patients; while nervous exhaustibility is a characteristic of the age in which we live, and of which we as social scientists and medical philosophers must take account.

I believe that the nervous exhaustibility of the present day has its origin in the immense uprising of mental activity produced by those supreme factors in modern civilization, free schools and a popular press. When we contemplate the astonishing inventions and discoveries which characterize the age, each in turn eclipsing its predecessors, and each powerfully helping to complicate the maze and impel the dizzying whirl of human activities, we cannot wonder at the evidences of over-tension and the increasing proportion of those who have to pause by the way. The one set of facts is the inevitable and logical complement and accompaniment of the other, and both are directly traceable to the invention of printing.

It seems as if humanity in this age of the world is reaching the end of its tether; that it is putting into action all its capacity, leaving nothing in reserve. The men and women of to-day and their successors, far more than those of former times, are feeling, or are destined to feel, the limitations of their power to do.

A statement of modern tendencies may be formulated thus:—

First. Immense increase and general diffusion of knowledge and rapid inter-communication awaken dormant energies, develop latent capacities, quicken mental activities, and there results nervous exhaustibility. So far all is normal and legitimate.

Secondly. Activity incites to ambition, emulation, competition, hurrying and striving, and there results tension of faculties and super-activity. Here the danger line is reached.

Thirdly. Hurry and competition bring over burden of responsibilities, cares, anxieties, jealousies, distractions, and these are the chief immediate causes of nervous exhaustion.

I necessarily omit from this discussion a class of cases much fewer in number than those with which we chiefly have to deal,—a class where idleness, lack of occupation and of definite purpose are commonly associated with habits of emotional excitement from reading trashy, sensational literature and with practices of vicious self-indulgence. I am not dealing here with the vices, but with the honest errors and natural tendencies which our age has especially developed.

The influences which lead to nervous exhaustion are all-pervasive. They permeate the atmosphere of our

¹ Read before the Massachusetts Medical Society, June 13, 1883, and recommended for publication by the Society.

modern civilization as bacteria do the air we breathe. We are all to a greater or less degree impressible by them; but, like the living microscopic germs, they make their easiest victims of those whose powers of resistance are weakest. It is not effort, it is struggling and striving; it is not business, it is competition; it is not education, it is cramming; it is not social pleasures, it is social emulations and envyings; it is not over-heated rooms and ill-ventilated houses, it is living on too large a scale; in fine, it is not work, it is *worry* that is sapping the energies of our people.

Now starting from the broad postulate here taken, many would reason, as many in fact do reason from a much narrower premise, that the case is well nigh hopeless for the coming generations of Anglo-Saxon stock. I am not of these pessimists. I do not expect that the race is to die out because it has not fully recognized its limitations, any more than I believe that modern civilization is to be given up to anarchy because it contains aspiring elements which ferment and upheave when confined by tyranny. It is possible that the Anglo-Saxon race in America, being foremost in development and therefore first to experience the limitations of human capacity, will also be first to appreciate the risks and to perceive and apply the correctives; will instruct by their example the slower moving peoples as they, in their turn, approach the danger line. With the poison may be found the antidote.

Nor am I of those who think that this whole matter is to be settled by comparisons of columns of figures, and disposed of as a question of vital statistics. It is mainly perhaps a question of mental quality, a something that the census-taker does not reach. No one can assert that mental power is cut down, that the will which dominates the world is weakened, because the nerves, the medium through which mind moves in its material investment, have sometimes to relax their tyranny over the flesh. Indeed it may be that the evil which we are discussing is less serious in its ultimate issue than its present manifestations threaten; inasmuch as it may be in considerable degree a conservative provision, destined to restrain, and thereby to maintain and transmit the forces which shall hereafter lead in the onward march of humanity.

In the mean time, in all the grades of neurasthenia, the one practical issue is *adjustment*;—adjustment of the race to its present environments,—adjustment of the individual to his and her present limitations; and this eminently practical issue is everywhere, with very rare exceptions, a practicable one. I say then that nervous exhaustibility, as a prominent characteristic of modern life, is the natural and legitimate concomitant of the rapid diffusion of intelligence and evolution of ideas; while nervous debility or exhaustion is the untoward result of a failure on the part of the individual, through his own mistakes conjoined to the errors of his progenitors and guides, to properly adjust his activities to his capacities.

It will serve my present purpose to very briefly indicate some of these special errors which may be called errors of mal-adjustment. And first there are ante-natal influences. The parents have the nervous temperament with the possibilities of nervous exhaustion written on every lineament, with probably the tracings of care and fatigue visible beside. The bride has assuredly wearied herself to the last degree with preparing the bridal trousseau and with calls and en-

tertainments and excitements; while the bridegroom with his own late hours at business or dissipation, has very possibly smoked six or eight cigars a day. Then perhaps during the fatigues of a wedding journey, and certainly in the midst of a tumult of social excitements and domestic cares, and of anxieties, not the least of which is the dread of offspring, begins under protest, to the horror and dismay of its progenitors, after numerous postponements secured at the cost of special aggravations of nerve function—begins the new human being.

Without particularizing minutely the progress of this life thus inauspiciously started, there is one other interesting fact of ante-natal influence to take note of. The woman, convinced sorely against her will that she is to become a mother, proceeds to despoil herself of energy after a new fashion. Whereas until now she has worn and wasted her strength in striving to do, henceforth during the term of her pregnancy she will continue the spoliation by striving to *be*,—not therefore, however, omitting the doing. Besides continuing all her wonted activities, she now undertakes unselfishly, for the welfare of the unborn child, to become a saint. She disciplines herself to equanimity and cheerfulness; suppresses feelings of irritability or despondency; resists all temptations to tearfulness; makes herself a very female Mark Tapley for being jolly under adverse circumstances. In this constant effort of will to control emotional manifestations, which are the natural relief of over-tension, she maintains and increases the tension at the expense of her own strength and the vitality of her offspring. In making herself a saint she becomes also a martyr to a mistaken idea of duty.

In proceeding with the subject, it is necessary to remark that the influences acting upon the child and youth are mainly calculated to develop and enhance the nervous excitability implanted in its constitution. These influences can barely be suggested here.

The graded system in the public schools, with the tests for promotion from class to class found solely in percentages of success in repeating from text-books, combined with the large increase in the number of branches required to be studied, and in the number of examinations to be undergone, makes the period of school life, in our day, a period of continuous strain and worry which inevitably results in over-tension. Likewise at home the child is introduced to the excitements of society from the tenderest years. The *boy* is still extant and flourishes under some difficulties; but of what was formerly known as the *girl* there are at present but few living specimens. She is absorbed and merged into the young lady. This young lady, not having had the opportunity to pass gradually from girlhood into womanhood, but having sprung into womanhood from childhood, with almost the celerity with which Venus rose from the sea, brings of organs and functions especially appertaining to womanhood such ill-conditioned equipment that her poor nerves, whether exhausted or not, must be perpetually hampered and fretted, perhaps bullied and half-starved.

Now having instanced some of the most noteworthy among the special exciting causes of neurasthenia, we come to consider its treatment. As already remarked, the successful management of these cases consists in adjusting the patient to the situation;—still better, in aiding and indoctrinating the patient in the principles and practice of self-adjustment. The patient cannot ad-

vance in this without the constant supervision of the physician; nor can the physician succeed without the intelligent and docile coöperation of the patient. Happily this is generally attainable, since the sufferers are usually quite capable of following a train of reasoning to its logical conclusions, and shaping their course of action consistently thereupon. With many their whole scheme of life has been laid upon an impracticable foundation; yet from childhood they have adhered to it heroically in consequence of erroneous teaching, and a mistaken estimate of duty. With such the remoulding of life to a new shape is slow and the work of time. Conviction comes by degrees, precept and doctrine serving as the interpreters of the lessons of stern experience. The physician himself must study with attention each individual case, and patiently form and adopt a plan of management. He will often have occasion to modify this plan to conform to a corrected estimate of the situation, or the powers and qualities of the patient; and the patient should understand this. The physician may often resort to illustrations to enforce his views, and to make clear the situation and the requirements of the case. The patient may be likened to a bank whose specie reserve has been dangerously reduced, and which must contract its business until its reserve is made good; or to a spendthrift, who has squandered his inheritance; or to a merchant, who has expanded his business beyond what his capital justifies, until he comes to the verge of bankruptcy. The one must collect promptly and shorten his credits, and otherwise gradually but steadily and resolutely restore his business to a safer basis; the other must rigidly limit his expenditure until it is sufficiently within his lessened income, with a margin for emergencies.

It may be explained that to have available strength for every-day use always implies the possession of a reserve fund of latent strength lying unseen and dormant like the specie in the vaults of a sound bank; that when, by continuous overdrafts, this reserve has been greatly impaired, more or less continuous but surely prolonged repose must be had without expenditure of nerve power until the nerve centres shall have regained a margin of force without which there cannot be healthful activity. When patients reproach themselves for nervousness, inefficiency, and lack of self-control, and propose to exercise more will and put forth stronger effort, they may be reproached for thinking to further compel by whip and spur the tired, jaded steed which has only too willingly and too patiently borne both burden and abuse.

I object emphatically to patients comparing themselves with others, and repining because they cannot accomplish as much as their neighbor. They need to be taught, as Thomas Carlyle says in *Sartor Resartus*, that "The fraction of life can be increased in value not so much by increasing your numerator as by lessening your denominator."

Very often, in the home treatment of cases of neurasthenia, some member of the family needs to be dealt with, the husband, perhaps, or the wife or the mother, and made to see the situation in its true aspect, to secure a necessary element of coöperative influence. Infelicities of expression and inconsiderate allusions are sometimes the precious prerogatives of a well meaning and well beloved one which cannot be taken away without undue violence, and are harder to neutralize than the spiteful shafts of intentional unkindness. Thus the patient and the environments must be mutually

adapted, and a wholesome mental attitude and moral atmosphere of cheerful tranquillity and patient, persistent hopefulness secured. When this is assured we may feel confident of success in due time. I would discountenance all attempts, however, on the part of the patient to have a time fixed in advance when recovery shall be complete, or even when certain recognized stages or indications of progress shall be reached. Sufficient for the patient that the earliest signs of actual improvement be pointed out by the physician, and that later ones apparent to the patient be verified. Only by observing the rate of real advance can any trustworthy estimate be formed of progress to come; and the physician may disclaim the possession of any other means of judging than this which is common to himself and the patient alike.

The first thing to do on entering upon the treatment of a case of neurasthenia is, to employ the military figure of speech, to sound a retreat; and the question first in order is how far to fall back, and where to make a stand. Sometimes the demoralization is such that there is evidently nothing to do but to retreat promptly to the ships or to the ultimate base of supplies; but very frequently it is justifiable generalship to pause and measure swords with the enemy; and a strongly defensible position may be taken and held considerably in advance of that base.

It may be decided that the patient remain constantly in bed for an undetermined but comparatively brief period; or only that a definite increase be made in the number of hours devoted exclusively to repose. The latter course offers the great advantage of leaving a portion of time daily wherein some, even if but little, exercise in the open air shall be taken. If the former plan be deemed advisable, it may or may not be necessary to introduce passive exercise, — massage or faradization, or both, as a substitute for active movement. If the circulation be feeble, the extremities cool, the skin clammy, and the muscles weak, such measures are distinctly indicated.

A capacity for taking extra sleep is highly to be prized as a means towards restoration; but some there are who cannot spontaneously attain it. If the effects of overstrain be heavily visited upon the brain, causing actual insomnia, restlessness, excitability, it is expedient to compel sleep and a dormant disposition by liberal doses of bromides, perhaps to some extent associated with chloral. In a large proportion of cases I have found an equally available and more satisfactory course than constant stay in bed to be its daily occupancy for twelve, sixteen, or eighteen hours out of the twenty-four, with darkened room and no interruptions except stated ones of the briefest duration for the taking of sustenance. The aim is to secure the largest amount possible of this time of quiet to actual sleep.

The patient may occupy the remaining fraction of the day at discretion, including one, or perhaps two, meals taken with the family, with this stipulation, that as much active exercise out of doors shall daily be taken as the strength will permit.

Generally every form of physical effort within doors, such as standing, ascending and descending stairs, is discountenanced, the powers being reserved for investment in those activities which should bring returns of new strength. There are few so delicate or so exhausted that they cannot bear with benefit, seated over the edge of the bath tub, a dash of cold water down the back from a sponge squeezed over the shoulders; and

many can themselves secure the needful prompt reaction from the slight shock by briskly handling the bath towel. Such efforts, which may be termed the calisthenics of the bath room, should be encouraged according to the patient's powers.

As much food should be taken as can be well digested; and the determination of the amount of repose and of exercise respectively required must often be made more with reference to the working of the function of digestion than of any other function. When a large share of a profound general enfeeblement is visited upon the digestive function to such an extent that the organs of digestion are as indifferent to food as the tissues are disinclined to select and appropriate their pabulum, tonics are often for the time useless, and active exercise impracticable. Here is a case for continuous stay in bed, with passive movements and exclusively liquid diet plied vigorously and systematically. Here the logical necessity of the special plan of management identified with the name of Dr. Weir Mitchell is inexorable up to a certain point.

The total nerve force available is so small that the stomach needs all of it; all functions but those of digestion and assimilation need to be suspended, or at least made merely accessory for a time, and the individual reduced practically to a single organ;—*venter et preterea nihil*. It is merely carrying out to its logical conclusion a principle which needs to be recognized and extensively applied. It is that in neurasthenia, nerve power being deficient or unavailable, and insufficient to go around and give each organ and function a supply, the digestive organs are entitled to a full share reckoned by the standard of normal strength.

The function upon which the whole organism depends for the generation of force has a preferred claim, and only such overplus as there may be after this claim is fully satisfied should be distributed among the other creditors.

Little need be said of the use of medicines. Their rôle is a subordinate one; their usefulness is incidental, but not therefore trivial. A typical case of neurasthenia in a healthy subject may sometimes be successfully managed with scarcely any aid from drugs; but such cases are, perhaps, exceptional. The possible need of bromides has already been referred to. The persistence of distressing headaches will suggest the use of caffeine or some such nervous stimulant. It is at once an indication of, and an aid to, nutrition, that the bowels be free. Constipation, like headache, is often a symptom of neurasthenia, which will disappear under the policy of adjustment. If it do not, laxatives are needed. Medicines to aid the digestion and food tonics will be introduced at the discretion of the physician.

If there be uterine trouble this may sometimes be ignored or disregarded; but it should receive considerable and effective treatment in that class where the local disorder is one which does not yield to general recuperative influence alone, but which remains to vex the nerves and retard the nutrition unless relieved by interference.

In discussing this subject an underlying idea has been that, as a rule, there should be, and generally there is, no place so suitable for the management of neurasthenia as home; and that the family physician should regard such cases as his peculiar charge, and success in their treatment as his duty. The physician who can appreciate and make available the advantages and

resources of the home will find no difficulty in deciding at what point or stage in the treatment of a case a temporary change of scene shall be expedient and desirable; nor will he fail to recognize and set apart in the category those cases, comparatively few in number, where some of the surroundings and influences of home are essentially harmful and radically incapable of adjustment, but remain as an insurmountable bar to the patient's progress. For persons so circumstanced, and for that larger number who are dependent on their own efforts for a livelihood, and whose pecuniary resources cease when their strength fails, admission to an institution for the care and treatment of nervous invalids is a priceless blessing.

My closing word shall be a tribute of respect and admiration for those public benefactors who endow such asylums, and for the physicians who, in the care of the inmates, give without stint, their time, experience, and skill, at the risk of exhaustion of their own reserve of nervous power.

A CASE OF CROUPOUS PNEUMONIA OCCURRING IN A CHILD WITH SERIOUS MITRAL DISEASE. RECOVERY.¹

BY ELBRIDGE G. CUTLER, M. D.

MARY M., thirteen years of age, an inmate of an asylum for girls for some years, was sent to me in July or August, 1882, as she was rather pale and seemed delicate, with the inquiry if she were not a fit subject for a few weeks in the country. The child was rather small and thin, and her face was pale. The visible mucous membranes were a little anæmic, and after a few questions I placed my ear on the chest, expecting to hear at most an anæmic souffle. To my surprise there was a very powerful cardiac impulse with a loud systolic murmur, and on careful examination I found considerable cardiac hypertrophy resulting from disease of the mitral valve. There was a systolic murmur heard loudest at the apex of the heart, and propagated towards the scapula and distinctly audible in the back. The pulmonary second sound was accentuated, and the right side of the heart distended. The patient received small doses of iron and later digitalis, as her feet swelled a little, and went into the country for several weeks. She returned home much invigorated, and I saw little of her till about the 1st of December, when she had several pretty severe epistaxes in the night at intervals; a deep-seated cellulitis at the base of the neck on the right side, requiring incision, came on at about the same time, and rather dragged her down.

At this time, December 1st, the physical examination of the heart was as follows: There was flatness on percussion a little to the right of the sternum at the level of the third intercostal space, which at the fourth rib was one and a half fingers' breadth to the right, and below curved in a little. To the left of the sternum the flatness began at the upper part of the sternal end of the third costal cartilage and extended out in a descending line to one and a half inches beyond the left nipple on the fifth rib. The whole breadth of the heart in its greatest diameter was five and one quarter inches. The circumference of the chest at the nipples

¹ Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society, April 11, 1883.