—— T H E S I S. ——

—— N E U R A S T H E N I A ——

—— with ——

NOTES AND COMMENTS

—— on ——

T W E N T Y C A S E S

OBSERVED IN GENERAL PRACTICE

—— by ——

A. D. MACNAIR, M.B., Ch.B., (GLASG.)

MANCHESTER,

1st. June, 1907.

—— INTRODUCTION and HISTORY. ——

By many neurasthenia is held to be a disease of Modern Life. It is, they affirm, part of the price paid for our advancement in Modern Civilisation. Beard, to whose extensive writings on this subject reference will again be made, insisted upon this connection. This view, however, it is impossible to accept. Many of the causes to which neurasthenia is traceable have been operative through all time. Moreover, it must be remembered that the separation of Neurasthenia from allied neuroses, so-called, is of comparatively recent date.

We are prone to imagine that a given disease has only arisen with our increased knowledge thereof.

Beyond question the group of symptoms included under the name neurasthenia was for centuries hopelessly confused with other functional, nervous disorders, like hysteria and hypochondriasis. This confusion is manifest from the vast variety of names affixed to the disease. We read, for example, of the following:- Nervosisme, Nervous

fever, Nervous diathesis, Hystérocisme, Acute cerebro-pneumogastric neuropathy, Nérvospasmie, Nérvopathie protéiforme, Maux de nerfs, together with many others that one might name.

Bouchut gives an interesting historical survey of "Nervosisme", as he calls it. According to his conception Hippocrates himself described, incidentally at least, many of the symptoms of the disease, and that "à propos de l'inanition, des pertes séminales, et des gastralgies."

In succeeding centuries, we find the symptoms constantly mistaken for and confused with those of other diseases. Amongst these latter, hysteria and hypochondriasis, stand pre-eminent.

The first beam of light, penetrating this darkness, would seem to have come in 1540, when in a book entitled "De abditis rerum causis," Fernel described nervous disorders as being the result of poisoning of the brain by suppressed Lacteal or Menstrual discharges. (ARNDT.) Then there followed such writers as George Cheyne of Edinburgh, who one and all adopted the term "The Vapours," to signify all disease characterised by nervous manifestations. Another name worthy of notice is that of Robert Whytt,

whose medical works were published in 1768. In this volume there is an essay entitled "Observations on the Nature, Causes, and Cure, of those Disorders which are commonly called Nervous, Hypochondriac, or Hysteric." It will thus be seen how Whytt, in a remarkable way, pointed to a distinction of primal importance.

Having looked over Whytt's work, I have, however, failed to find the symptoms, distinctive of neurasthenia, clearly defined. Yet it is significant that he, more than a century ago, should have anticipated many of our present day theories.

Thus, he reduces the predisposing causes of such disorders to two:-

1. A too great delicacy and sensibility of the nervous system.
2. An uncommon weakness, or a depraved or unnatural feeling in some of the organs of the body.

"Occasional" causes, he holds, are:-

1. Some morbid matter bred in the blood.
2. The diminution or retention of some accustomed evacuation.
3. The want of a sufficient quantity of blood, or of blood of proper density.

Coming to the nineteenth century we have the disease delineated under the term "Spinal irritation."

In 1850 we come to the work of Bouchut, entitled "D l'état nerveux aigu et chronique ou nervovisme." A perusal of this book is sufficient to show that here for the first time there appeared a succinct account of the disease, as to its nature, causes, symptoms and treatment. But, to Beard of New York one must turn for a full and scientific presentation of neurasthenia as a distinct disease. His first book on the subject, entitled "A Practical Treatise on Nervous Exhaustion (Neurasthenia)", was published in 1880. In the following year a supplement appeared, "American Nervousness, its Causes and Consequences." Numerous, on this subject, have been Beard's contributions to local American medical magazines.

His views were received with opposition, with contempt, or with indifference. He, himself, described neurasthenia as "The Central Africa of Medicine."

Today we have a very different tale to tell. Any one who looks into the matter must be amazed at the mass of literature upon this subject only, during the last generation.

In the words of Allbutt, "Beard is avenged, and neurasthenia holds the field as a definite symptom-group."

Let it not be imagined, however, that the disease is now universally recognised as a distinct morbid entity. Far from it. One of our leading text books so characterises the affection as to show that the author is entirely sceptical as to their being any pathological basis whatever. Largely, he apparently conceives of it as a figment of the imagination of patient or doctor. Now, it may be asked, "Why labour the point." Because, in the first place, our treatment of these persons will be largely determined by our conception as to the nature of their trouble. Moreover, other so-called neuroses, come into the same category, and are in our day so increasingly prevalent, that contemptuously to apply the term "neurotic" and pass them by augurs a strangely limited scientific outlook.

Psychology is gradually but certainly leading us upwards to the conception of the interdependence of mind and body. Innumerable instances crowd in upon us as we think upon this matter.

Traumatic hysteria and neurasthenia, for example, manifestly owe their incidence to a powerful mental impression. This impression, let it be noted, which in one subject may produce absolutely no effect, will in his neighbour give rise to "Phobias", to paralyses, to pareses, to paraesthaesiae, to what not. A notable instance

occurred in my own practice. A young, healthy man passed through a railway accident. The carriage in which he was sitting was turned completely over, and he found himself pinned to the roof. Yet he escaped with a few bruises. The mental effect was limited to a slight, quite temporary loss of memory.

On the other hand, Clifford Allbutt cites a case in which all the signs of neurasthenia showed themselves in a lady, simply from a fall backwards upon her buttocks in lifting a child over a wall.

It is evident, then, that the "Mentality" of the patient must have a profound effect upon the entire economy.

Dr. Tuke's work abundantly illustrates this point.

Nevertheless, it were a mistake to suppose that all the neuroses are amenable to Psychotherapy. To some, in these days, drugs would appear to be of very limited application. If the mind causes, let the mind cure, they say, and so "Suggestion" is in danger of excluding all other methods of treatment.

—— THE NATURE OF NEURASTHENIA. ——

In my opinion neurasthenia seldom or never occurs apart from a primary defect in the central nervous system.

This defect may be hereditary, it may be congenital, or it may be acquired. Often it is latent and is only made manifest by some of the exciting causes which, to give accuracy of conception, I have tabulated herewith.

This theory as to the aetiology of neurasthenia, it will be obvious, is all important in dealing with the question of treatment, inasmuch as, for example, in the vascular and reflex cases, the toxaemia or the abnormal organ, may be treated, and yet the neurasthenia remains and demands attention, (vide Cases.)

It is essential, in reference to the above exciting causes, to emphasise the fact that one cause constantly overlaps and co-exists with others. For example, the gastro-intestinal system may give rise to a toxaemia, as well as to disturbing afferent impulses. Neurasthenia has been aptly termed "The Fatigue Neurosis." The condition in the nerve cell resulting from these various aetiological factors connotes "exhaustion", to which the symptoms of neurasthenia, therefore, are traceable. To say this is not to imply that we know much as to the histo-pathological changes in the nerve cell. This question, however, will be conveniently discussed in a

later section. (See "Neurasthenia in Relation to the Nervous System.")

T A B L E I.

EXCITING CAUSES OF NEURASTHENIA.	A. VASCULAR	a. Quality of blood.	a. Microbic toxins.	e.g. B.coli communis Pyogenic cocci.
			b. Chemical toxins.	e.g. Albuminoid bodies.
		b. Quantity of blood.	Anaemia in alternation with Hyperaemia.	
	B. REFLEX.	a. Diseases of Organs.	a. Gastro-intestinal tr. b. Cardiac. c. Reproductive. d. Visceroptosis of Glénard.	
		b. Traumatic.	Psychic shock, e.g. Post-operative psychoses. "Railway-brain."	
	C. Neurasthenia of Mental or Physical over-exertion. (Exhaustion.)		Cerebro-Spinal Neurasthenia.	

IS NEURASTHENIA A TOXAEMIA?

We have first, then, to enquire how far the character of the blood is responsible for neurasthenia?

Clinically, the results of toxins, (using the term in its wide significance) in the circulating blood, are daily before our eyes. Examples might be multiplied. Modern Bacteriology is a study in itself. The internal secretions of such glands as the thyroid, the pancreas, or the supra-renal bodies are found to exercise a profound effect upon the economy.

More recently too the chemistry of living protoplasm has increasingly received attention.

Certain toxins, moreover, are known to have a selective affinity for nervous tissues. The convulsions of strychnine poisoning, the wrist drop from lead, the delirium of the alcoholic, may be mentioned.

The toxins of tetanus, of rabies, and of diphtheria, are examples of organismal poisons having a like specific action. A striking instance of this, too, has recently been demonstrated in the changes found in the posterior ganglionic cells in herpes zoster.

Influenza, a disease, protean in its manifestations, and lately, to our cost, more and more in evidence, affects in some mysterious but unmistakeable fashion the whole nervous system, alike cerebral, spinal, and peripheral. The psychoses following influenza are among the most intractable forms of disease, we are called upon to treat. It has indeed been with some reason urged that since the more recent advent of the scourge in 1889-90, the neuroses have increased, just as other diseases have been more or less modified thereby. Depression following influenza is an all but constant symptom. Whether it be due to a toxaemia, or whether to the exhaustion following upon an acute febrile disease, is a point of interest.

Poisons, moreover, have different effects in different morbid states. The placidity of the tuberculous, and of many affected with organic disease of the nervous system, the dulling of the senses in typhoid fever, the active delirium of typhus, and of pneumonia, may be mentioned.

In neurasthenia, depression is the rule. It is indeed remarkable how calm may be the mental condition in organic as distinguished from functional disease, in such an organ, for example, as the stomach.

The GASTRO-INTESTINAL TRACT, has always been

incriminated in seeking for the cause of neurasthenia.

The question comes to be whether the malady is due to an auto-intoxication, the poison or poisons, organismal or chemical, acting injuriously upon the central nervous system.

In France and Germany attention has been given to this subject, the names of Bouchard, de Fleury, Ewald, and Boas, may be noted.

Ewald's insistence, twenty years ago, upon the necessity of accurate chemical analysis of the stomach contents, obtained after the administration of his test-meal, has resulted in an ever-increasing study, of the various forms of dyspepsia. By following his rules the percentage of hydrochloric acid, as of pepsin and rennin, can be determined, together with the presence of abnormal acids, as lactic, acetic, and butyric.

Hydrochloric acid even in trace inhibits the action of bacteria. The average amount of the acid present in the normal stomach contents is found to coincide with that found experimentally to inhibit the growth of fermentative and many pathogenic organisms.*

Bouchard taught that the symptoms in neurasthenia arose as a consequemce of fermentation in the stomach.

*Schäfer's Physiology: Ed. 1898: p.364.

The mobility of the organ is deficient owing to neuro-muscular weakness, hereditary or acquired, stagnation of food follows, the stomach being insufficiently emptied, hence, fermentation, putrefaction, and the absorption of deleterious toxins.

Savill has given detailed attention to this question and a new edition of his interesting book has recently been published. Therein he cites cases and statistics to prove his contention that the majority of cases of neurasthenia are associated with and are caused by gastro-intestinal disturbance.

In these the gastric or intestinal symptoms preceded in varying time the advent of the neurasthenia, and treatment directed to these parts cured or relieved the nervousness. Thus he quotes from 157 hospital and 103 private patients. In the former 74 cases, and in the latter 59, came complaining of nervous symptoms and were discovered to be suffering from some affection of the gastro-intestinal tract. Moreover, in gastric cases Savill insists upon the dyspepsia being of the ordinary type and sharply separates such from the so-called gastric neuroses.

As to the toxin, Savill thinks it may either result from fermentation in the stomach or intestine, with the absorption of poisonous products, or that it may be microbic.

Toxins may have their origin in many septic pyogenic foci. Reference here must be made to the mouth as a not unimportant source of infection. Hunter has drawn attention to this question and Savill insists upon the prevalence in his cases of early decay of the teeth, with oral sepsis.

Again, as has been demonstrated, the fons et origo mali may be in a chronic empyema of the Antrum of Highmore, or in septic disease of nose, throat or ear.

In whatsoever manner produced, a toxaemia is the ultimate condition, affecting all the tissues, and having it may be in the case of some toxins, a specific effect upon the nerve cell itself.

In commenting upon the view which refers neurasthenia to disorders of the gastro-intestinal system, I would observe, in general practice, dyspepsia in its various forms is about the most common condition the practitioner is called upon to treat. Neurasthenia in comparison may be said to be uncommon. Nervous patients are frequent enough, but it would be an error to imagine that all such are neurasthenics. The same remark holds true of constipation, especially in women in whom again neurasthenia is relatively infrequent. After enquiry amongst local

medical men, I am given to understand that neurasthenia, in its typical form, is less frequent than one had a priori conceived.

Again, in my experience, one of the forms of gastric trouble most frequently met with in general practice, is Hyperchlorhydria, at least if one may diagnose this condition from symptoms alone. It may well be that stomach disorders differ in their nature in different localities. Be this as it may, one continually sees patients who complain of pain coming on one or two hours after food, without vomiting, but with acid eructation, relieved by increase of the albuminoid substances in the diet, and aggravated by the usual "milk diet." Amongst these I have rarely seen neurasthenia. It is, then, easy I think to exaggerate the rôle played by the gastro-intestinal disorders. It seems as though there must be a further factor, which doubtless acts by diminishing the resistance and so rendering the tissues more vulnerable.

It is of interest here to note a fact which according to Ford Robertson is supported by convincing evidence, that the cells of different persons react very differently to toxic agents, this being a question of inheritance. Moreover, in one individual the cells of the same category

show various powers of resistance to toxic agents, some unaffected, some altered, others destroyed.*

The further factor referred to, then, is I believe to be found in the central nervous system; the trouble primarily would seem to lie here.

In not a few cases also the use and abuse of alcohol has to be considered. It may here be found to act a double part. The question is becoming more and more important in all disease, but especially in those involving the nerve cell. Writers like Woodhead, and Horsley, have insisted upon the injury done to the higher centres even by moderate doses. The prognosis in the event of acute illness in the case of the alcoholic is well recognised. Have we not here a possible explanation of the association of gastric-intestinal disorders in many neurasthenics? If the resistance is lowered will not any toxic agent in the circulating blood, whether microbic or bio-chemical, have its power for ill tremendously increased? Moreover, the effect of alcohol upon the stomach itself must be remembered, a vicious circle being thus instituted.

Alcohol has been shown to interfere very materially with the metabolism of living protoplasm, thus weakening

*F. Robertson: Pathology of Mental diseases. p.255.

the defences of the body, phagocytic and plasmic.

Therefore I think we cannot hope to cure for all time our neurasthenics by simply correcting the affection of the gastro-intestinal tract, although this I admit to be important. Yet often the neurasthenia remains untouched, and can only be benefited by carefully considered treatment directed to the individual patient.

NEURASTHENIA, THE RESULT OF FAULTY METABOLISM.

Many have sought for an explanation of neurasthenia in disordered metabolism. Primarily the mischief may be in the central nervous system which according to de Fleury is "the regulator of organic combustion." He quotes Marinesco, who supposed there were two elements in the protoplasm of the grey matter, namely, Kinétoplasma and Trophoplasma, the first presiding over muscular contraction, the second over nutrition. Accordingly de Fleury thought neurasthenia might be referred to an affection of the centres presiding over nutrition. Others think the nervous centres are involved secondarily. According to such writers, metabolism is primarily at fault, giving rise to chemical substances which poison the nerve centres.

Again, the materials normally excreted may, being retained, reach the blood stream, and act in the same fashion. Others have held that there is in such patients a "qualitative modification," of gastric digestion, whereby albuminoid bodies are produced, anaemia is the result, seriously interfering with general nutrition, and with that of the nervous system.

Evidences of this disordered metabolism are found in the urine.

In amount it is subject to variations not found in health, often it is increased, at times it is scanty. There is departure from the normal in its solid constituents. The chlorides are increased. There is an excess of uric acid in relation to urea.

The normal proportion between the alkaline and the earthy phosphates, namely 3-1, is disturbed by increase in the earthy phosphates, so that the proportion may be 1 to 1. This condition of "phosphaturia" falsely so-called, has been investigated in my patients and will be further referred to.

Until, however, we know more about the chemistry of the body, we cannot do other than surmise as to the true source of the mischief being a question of faulty metabolism. It is by no means only the apparently

dyspeptic and ill-nourished who are laid low by neurasthenia. The patient may be in good health. His digestion may be normal. As regards physical examination the findings may, be, nay, usually are, negative, and yet the sufferer may be manifestly ill, and utterly incapable of taking part in the duties of his life.

Auto-intoxication, in short, cannot adequately account for the condition. We have to search deeper. The more one sees of such patients the more is one impressed by that nervous factor which is found in each one.

This it is which sharply separates the neurasthenic from other men and women. There is an inherent lack of "nerve force." To all outward appearance he may seem well and even robust, and only when we begin our interrogation can we determine the existence and essence of his complaint.

Upon this question of nervous instability we must found our treatment.

—— NEURASTHENIA A "VASO-MOTOR NEUROSIS." ——

Following very naturally upon the consideration of neurasthenia as caused by a toxic condition of the blood,

comes the question as to the part played in the disease by the vaso-motor system, for, as pointed out by Savill, it is in the toxic cases that symptoms referable to this system are manifest, although in all forms they are prone to occur.

One has seen few cases present themselves without manifest evidence of vaso-motor excitability. The flushings, the pallors, the sweating, the local syncope, with the cold hands and feet so commonly complained of, are all significant of the influence of the vaso-motor system.

It is not surprising, therefore, that the latter has been held to be the essential factor in the aetiology of neurasthenia. Weber, who used the term with which this section is headed, believed the symptoms to be entirely due to this cause.

And, indeed, it cannot be denied that the vaso-motor centres, medullary and spinal, exercise in the disease an important part in the development of not a few of the symptoms. Moreover, disturbance in the vaso-motor mechanism will tell upon the heart, in this way explaining the attacks of syncope, and pseudo-angina, to which many of the patients are liable.

The balance of the circulation is often seriously disturbed. Thus, Clifford Allbutt refers to a remarkable

instance in which the pulse rate in recumbency was 76, while it constantly stood at 116 when standing. That "tonus" of the arteries and arterioles to which the efficiency of the circulation is due is unequal and capricious, out of gear, as one may say. The blood in these cases tends to collect, according to Oliver, in the splanchnic veins, the arterioles supplying this part being dilated. This condition, which he names "splanchnic inadequacy or vaso-motor ataxia", may result from nervous exhaustion and other forms of debility.

But while the circulation is thus manifestly easily disturbed, this is but a local expression of a general condition. Perhaps it would be more in accord with fact to call it an effect instead of a cause. To credit it, at all events, as being the factor per se, is to limit our view of the malady. The nervous system in its entirety must occupy the mental field, not merely the vaso-motor system which it governs.

This, indeed, was the position taken by Beard, whose views upon neurasthenia may here be discussed, for in his writings the vaso-motor nerves occupy a conspicuous place.

Beard was the first writer who systematically defined and studied neurasthenia. To him we owe the

first clear description of its complex symptomatology. "La Maladie de Beard," as the French writers often call it, is evidence of his work in the field.

To Beard, "Nervous Exhaustion" was essentially due to the tremendous rush of modern life and modern civilisation. We pay heavily in the increase of nervous diseases for our more perfect civilisation.

Thus there has been a steady increase in chronic nervous diseases, together with an increasing prevalence of the asthenic diseases and an diminution of the sthenic.

Not only so, but Beard held that there had been an increase in diseases which although not directly involving the nervous system had yet within them a neurotic element. In these he included Bright's disease and diabetes.

As to the pathology of the condition Beard is equally clear. Neurasthenia to him means nervelessness. The cell is in a state of exhaustion, that is the essence of the malady. This he calls the trunk of the tree, the resulting conditions of the organs and tissues are the branches. The nerve centres being thus weakened there is as a result, instability.

The symptoms are due to reflex action. This may arise from any part of the body and be transmitted to any

other part by means of cerebro-spinal and vaso-motor nerves. The brain, the digestive, and the genito-urinary systems are the three great irritation centres. This increase in irritability markedly affects the cardio-vascular mechanism, hence the infinite variety and changes of the symptoms. Beard is impressed with the all-important part played by the vaso-motor system. Anaemia and hyperaemia alternate. The latter, indeed, may account for many of the symptoms, but the vaso-motor system in its turn depends upon primary nerve defect. One of the most impressive examples of this is found in the so-called "Irritable eye." Here there is asthenopia with photophobia, but without discoverable change in the fundus.

In 1879 Hutchinson had written upon this very subject in two lectures entitled "Hyperaesthesia of the Eye." Therein he describes such cases as are referred to by Beard. Photophobia may be so severe that the patient must be confined to a dark room. Hutchinson in such patients finds only tortuous retinal and choroidal veins, and he suggests that hyperaemia may have something to do with the various nervous phenomena which he found present.

Beard did not consider the constitution of the blood itself as a possible source of trouble in neurasthenia. Probably in his day the terms "Toxaemia"

and "Toxin" were in less evidence than they are today. The affections of the gastro-intestinal tract, for example, so commonly found in neurasthenia, according to Beard are due to defect in the nerves governing the stomach and intestine.

The essential thing is a disorder of the central nervous system. This it is which will account for the gastro-intestinal condition and likewise for the vaso-motor phenomena, with which it is so often associated.

My own experience in these cases would lead me to endorse the view of Beard. To take a concrete instance. Case I is of the type referred to by Savill in which we find a triad of symptoms, namely:

1. Irritability of the Skin, with Urticaria and Dermographia. 2. Irritability of Temper. 3. Restlessness. I have known this man for some years and the periodicity of his attacks had struck me, together with their invariable association with an error in diet, resulting in gastric disturbance with vomiting. In his case, too, the cardio-vascular mechanism bears the brunt of the attacks and to my mind the case is suggestive of the fact that auto-intoxication from the gastro-intestinal tract may act as an accessory cause in some cases. Let it be noted, however, that this man to begin with was highly neurotic and of nervous descent. No one who saw him could for a

moment doubt this. Treatment, directed to the relief of the gastric signs, only temporarily benefits him.

SEXUAL NEURASTHENIA.

This form is found more especially in men. The sexual organs have been credited with an all important rôle in many cases of the disease. The profound psychic effect of derangements of these organs every one has repeatedly verified.

An emotion only may cause or may arrest erection and emission, showing the part played by the brain in the act. On the other hand a purely mechanical stimulus, apart from the influence of the higher centre, may have a like effect; we have to deal with the lumbo-sacral spinal centre.

That the mental element is here essential can hardly be seriously disputed. Such men are first of all morbid, introspective, often "religious.", hyper-conscientious, given to melancholy. It is indeed remarkable how profound the depression may be in affections involving these parts.

A young man consulted me, in despair, on account of supposed enlargement in the glands of the groin. I

examined and found all perfectly normal and told him so.

These patients believe you and can be re-assured; they may be argued out of their obsession. They, in this, differ from the hypochondriac, who has a fixed delusion, of which it is impossible to rid him. Yet it must be remembered that neurasthenia merges into hypochondriasis, and is closely related to insanity.

This fact merely illustrates how essential it is rightly to treat the vagaries of such patients.

By some it is argued that the significance of the cause here considered has been much exaggerated. It is certainly true that we should steer our course with due care, and administer differing advice to differing patients. In the main one has to recognise that the tendency in these patients is for the mind to focus itself upon the genital organs. Encouraged by quack literature, which dilates upon the horrors consequent upon the least slip, a young man imagines he is lost for time and for eternity, or that his end must be the asylum, or that he will become the victim of some foul disease.

The age of puberty in boys needs judicious management. It is plain that the passing from boyhood to manhood, when the strength of the sexual instincts first

manifests itself, is a time of testing.

Nor ought it to be forgotten that the first warning sign of a neuropathic predisposition may now show itself in the form of excessive sexual abuse. A vicious circle may result, the local trouble in itself of only minor consequence so acting upon the mind as to result in actual nerve weakness which in its turn reacts detrimentally upon the local parts.

In any case, the condition is in toto nervous, and any view which gives undue prominence to the genital disturbance will usually do more harm than good. This entire question wants lifting to a higher plane, and we may see much benefit accrue from a wise prophylaxis. The whole field of "The Hygiene of the Mind," so interestingly discussed by Dr. Clouston, demands recognition. Foolish modesty prevents fathers sounding that timely note of warning to their boys, which would result in the saving of an infinitude of needless misery, mental and physical. Here pre-eminently prevention is better than cure, inasmuch as the cure may be difficult if not impossible, particularly if the stigmata of mental degeneration are present.

Later in life the anxiety takes the form of a fear of impotence and the miserable sufferer is haunted day and

night by the grim spectre. He requires careful and judicious management. In no case is it more true that the result will be different according to the view taken by the physician concerned. Psychotherapeutics must, if the best results are to be obtained, be allotted a foremost place. These patients, first of all, need persuasion and encouragement, that a new belief in their own powers may be engendered. Their neurosis, by its very nature, renders them amenable, easily influenced in their mental outlook. One must attack the trouble essentially from the stand-point of the individual mental temperament of the man concerned. This is all the more so that such men are more than other neurasthenics in danger of becoming confirmed melancholics.

What in the beginning may be merely an obsession, which a little wise handling will very quickly dispel, often passes into that more hopeless condition in which delusion takes the place of obsession, and the mental power becomes incurably damaged.

Curious are the complaints made by these sufferers. Thus one man consulted me on account of a persistent moist condition of the end of the urethra, which gave rise in him to miserable fears and anxiety.

Apparently his case conformed to those referred to by Allbutt in which at the end of micturition there is a

jet of mucus, with shivering, and smarting in the act, with unaccountable exhaustion. In this patient's case, an attack of syphilis, some years before, certainly accounted in part for the symptoms, on account of a morbid fear of a return of the disease.

The point upon which here one would insist, is that the whole character of the man was changed. Anxiety and misery was depicted in his whole bearing. His wife told me he spent his evenings in brooding silence, and indeed was in imminent danger of delusional insanity when a domestic event occurred which turned the current of his mind and quickly resulted in relief.

Surely an excellent example this of the paramount rôle played by the nervous centres in such men.

NEURASTHENIA IN WOMEN.

The word Hysteria, dating from ancient times points to the prominent share supposed to be taken by the reproductive organs, in almost all the nervous diseases of women.

The influence of these organs in the initiation and aggravation of morbid states of the general system is a wide subject.

In any given case it may be difficult accurately to assign to these parts their proper share in the aetiology of the disease in question. Chlorosis, for example, is common at the time of puberty, but the exact cause is unknown, although doubtless it is associated with the changes undergone by the system in question at this time, and their relation to the nervous centres. In pregnancy the signs referable to the nervous system are often more or less marked. Only recently I saw a young Jewess in her first pregnancy. She presented nervous symptoms to a marked degree, including "faintings," in which I observed a condition of Catalepsy with rigid extremities and closed eyes.

The vomiting of the pregnant state is another remarkable evidence of the profound effect on the nerve centres exercised by the parts under review.

In reference to the part taken by the reproductive system, in the functional diseases of the nervous system, unless our ideas are clear, we shall be prone in diagnosis, prognosis, and treatment, to be more or less haphazard.

Two errors may be made. In the first place, the local trouble may be ignored, whether from oversight or from lack of due care,and the entire treatment may be concentrated upon the nervous system.

In the second place the local disease may be treated and the associated and not seldom essential neurotic element left severely alone. Under these circumstances, so much misguided attention has been paid to the local conditions that the last state of the patient is worse than the first, her mind becoming centred upon her reproductive organs.

In practice I have seen examples of each of these, and both are fraught with mischief to the patient. In case IX an unmarried woman, we have an instance of a sort common enough. Here was an intensely neurotic subject, one of the worst I have seen. The local trouble when first I saw her, consisted of a retroverted and fixed uterus. She had been under the charge of a gynaecologist who contented himself with curetting the uterus, and ignored the neurosis, and the all-important antecedent history. The first-named error is not so common, but may

often be met with, the lesion in the pelvis being overlooked.

Now the ways are numerous in which those parts lead to profound depression of general health, and of the higher nerve centres. The causes are never simple.

The patient may be unmarried as in two of the cases cited here. Both had displacement of the uterus, the result of accident, so that the fact of trauma had to be considered. In both the neuropathic diathesis was marked.

In many cases menstruation has to be enquired into especially in the direction of excessive flow, for as a contributing cause one commonly finds this among young women. Still more important as an aetiological factor is Dysmenorrhoea, with its ever-recurring strain on the system. In married women we find lacerations of the cervix, with endocervicitis, again resulting in a great drain upon the strength, with anaemia and nervousness.

The trouble has been found in ovary or in tube, with consequent septic absorption. Or there may be nothing discoverable on physical examination, nevertheless, the patient has constant acute pain, and the surgeon is tempted and too often yields, to clear out the pelvic cavity.

A further fact to be considered is that in a majority of the cases neurasthenia in women is associated with constipation, often of an obstinate type. We have the gastro-intestinal tract as a contributory source of mischief.

Again, anaemia is, in some degree well nigh constant.

How, then, are we to attack the disease, characterised by so many complicating morbid factors?

I am convinced that a majority of our patients may be relieved if not cured by judicious treatment directed to the local affection, if, and only if, the importance to be attached to the nervous element is kept in mind. Now in many such cases the method so successfully initiated by Weir-Mitchell has given excellent results. Playfair calls the Weir-Mitchell treatment, "The Miracle of Modern Therapeutics," and while every one might not be inclined to go so far, there can be no doubt that in selected cases, and with due precautions the results often are surprising. Unfortunately the method is beyond the reach of many, whose days must be spent in striving to make ends meet. My own view is that only to look to the pelvis, leaving the nervous system severely alone, is to make a disastrous mistake, and one which will end in disappointment and discredit. It is in this connection quite remarkable to notice how many of these women come with a history of long-continued anxiety consequent upon nursing some sick relative. This leads to dissipation of nervous energy, and the person may be reduced to very low condition. Psychic treatment, here, must occupy an important place.

NEURASTHENIA AND VISCEROPTOSIS.

Intimately connected with neurasthenia in women is that remarkable condition now to be considered, and first described by Glénard, in which certain nervous signs occur, associated with prolapse of one or more of the abdominal viscera.

Glénard's writings were published in 1885, 1886.

The abdominal organs may sink en masse, or the liver, the spleen, the stomach, the intestines, and most commonly of all, the kidneys, especially the right, may drop. The spleen has been found in the lower abdomen, and in the right iliac fossa.

The resulting symptoms may be entirely absent, they may be slight and limited to a senation of drag, or they may be extremely severe.

In Case XIV of my series the right kidney could be moved into almost any part of the abdomen, but in the recumbent posture was usually to be found in the middle line beneath the umbilicus. Yet the symptoms were never marked.

In another of my patients, I observed dropping of the small intestine, the mesentery having apparently yielded, and yet the patient, neurotic though she was, made

no complaint whatever, referable to the abdomen, and indeed was profoundly ignorant of the state of affairs.

Now in such a condition as visceroptosis it might a priori be plausibly argued that severe results with symptoms referred to the abdomen must be the rule, and that in this way we have quite adequately explained the cause of the neurasthenia. Facts, however, are against such a view. We may have marked ptosis without a symptom referable to the abdomen. Not only one, but all the viscera may be prolapsed and yet the patient may enjoy ordinary health. In the case above referred to of movable right kidney, the symptoms were but slight, and were confined to the mental unpleasantness of feeling the swelling moving around, with occasional "draggings." Further, nephrorrhaphy had but little effect in relieving the neurosis.

As a rule, moreover, neurasthenia is found unassociated with visceroptosis. The latter, therefore, I imagine can only hold a subordinate place as a cause of neurasthenia. If found in a patient eminently neurotic, and associated even with apparently slight symptoms, it may beyond question aggravate the condition, and it ought on this account to receive attention by means of support, to the part, but when all this is done, the neurasthenia will remain, and will still demand to be reckoned with. In other words the condition is primarily and essentially a neurosis.

TRAUMATIC NEURASTHENIA.

Cases are not infrequent in which we find symptoms of neurasthenia following upon "shock", using that term in its popular significance. This shock may arise from an infinite number of causes.

The post-operative psychoses may be mentioned.

Two of my cases are classed as Traumatic Neurasthenia. In the one the cause was a gas explosion, in the other an electric current shock when boarding an electric car.

In whatever manner produced, the condition is essentially the result of a powerful mental impression.

A point to which attention has been directed is that the signs may not be manifest at once, an interval of a week or two and even longer may elapse. In one of my patients the symptoms came on immediately, in the other only after a week had elapsed.

In this broad sense, then, one may use the term Traumatic Neurasthenia. The name, however, in general medical literature has a more restricted meaning. The condition was first described as arising in consequence of a railway accident. Erichsen seems to have first used the term "Railway Spine," to connote the symptoms following upon such an accident; the condition being the result of

"concussion of the spine." To Erichsen, however, it did not appear probable that apart from any conceivable lesion capable of being demonstrated in the cord there could arise such a train of symptoms. He could not admit a diagnosis of hysteria. To him, the injury resulted in a meningo-myelitis, which might extend to the brain itself. Rightly or wrongly this conception has been superseded by the belief that the mental factor in these cases holds the first place. There may be, however, an organic change in the cord and its membranes, but this question cannot be settled in the majority of cases. When, therefore, the immediate cause came to be looked upon as psychic, the term "railway brain," came to be used in place of "railway spine." This change in conception was in large measure due to such writers as Charcot who pointed to the association of hysteria with trauma, and whose demonstrations in hypnotism seemed to show the intimate connection between many of the neurasthenic signs and the hypnotic state. In our country the name of Page continually appears. Page believed in contradistinction to Erichsen that the cord by its bony envelope and connections was secured from gross injury and insisted upon the functional character of the disorder. Thus he speaks of "some functional or dynamic disturbance of the nervous equilibrium or tone, rather than structural damage." Other contributors have been Reynolds and Thorburn in England,

Putnam, Walton, and Weir-Mitchell in America, and Oppenheim and Westphal in Germany.

We come in this connection as conveniently as elsewhere to the distinction between hysteria and neurasthenia. These names have given rise to much confusion. It has been and still is held by many that neurasthenia is but hysteria in the male. Dubois, for example, suggests that from the inherent differences in mental constitution as between man and woman, one would expect the manifestations to differ as in fact they do, the disease yet being the same.

In man, the tendency is to depression and morbidity, in woman to wild restless exuberance.

My own belief is that the diseases are distinct, and ought to be separated. This does not mean that they may not occur together, a hystero-neurasthenia as described.

Neurasthenia is well named "The Fatigue neurosis," being the result, as is supposed, of exhaustion of the nerve centres. In hysteria the idée fixe of the French is fundamental in our estimation of the pathology of the condition.

In any given case of trauma, the symptoms may be those peculiar to neurasthenia, to hysteria, or they may partake of the nature of both, a hystero-neurasthenia. The common form is neurasthenia. Thorburn, out of 300 cases, had 25 only of hysteria. Much discussion has arisen as to the aetiology of these symptoms, especially in reference to the rôle to be assigned to nervous predisposition. Some,

insist upon its invariable presence, others that it has been exaggerated.

As hinted earlier in this Thesis I am strongly of opinion that in most there is a neuropathic basis. For it must be admitted that the injury is often ludicrously trivial compared with the severity of resulting symptoms, while as in a case mentioned earlier in this paper, a very severe accident with presumably serious concussion, and with marked accompanying elements of terror, gave rise only to few and trifling results. On the other hand, it is doubtless true that a person who so far as can be ascertained is free from any neurotic taint may develop an intractable form of one or other neurosis.

A question much debated is the part played by the inevitable litigation in the persistence of the symptoms. It is held that in many instances the whole trouble clears away upon the receipt of adequate compensation. This was the opinion expressed by a brother practitioner on my "electric tram" patient, but the opinion was falsified by subsequent events. Compensation in this instance had little to do with it.

My own opinion is that the matter has often been made unduly prominent in these cases.

NEURASTHENIA AND PSYCHOLOGY.

In America and on the Continent much of great interest has been written upon the subject of neurasthenia. Many look upon the malady as from first to last Psychic. Of such one may mention Charcot, Gilles de la Tourette, Huchard, Mathieu and many others. The French are certainly a nervous race and alike in hysteria and neurasthenia, extreme cases are seen, seldom met with in England. Partly it may be on this account the Psychic view of such disorders has received the attention which has been too largely denied to it with us. And hence have arisen the rival schools of Saltpêtrière and Nancy where hypnotism is studied and practised.

Now it must never be forgotten that in the neurasthenic the "mentality" is at fault. Without question he is introspective, he is an egoist. In everything he suspects himself, his imagination runs riot. If he is a doctor, the loss of a patient is set down to some mistake which looms large on his mental horizon, and makes him so miserable by day and night that he may meditate suicide.

Every little ache and pain is magnified a hundredfold. Many of the patients are akin to hypochondriacs,

with attention too persistently fixed upon some one organ, while some are on the "borderland" of insanity and may cross it.

The subjective sensations are almost innumerable and are traceable to the patient's mental instability.

Let him, for example, be the subject of dyspepsia, a not uncommon complaint, and at once his unstable nerve centres are profoundly affected. Whether the effect is and to what extent it is due to, a toxaemia I am not now enquiring. My contention is that the gastric condition so acts upon the mind of the patient, or which, according to many, but not to all, is the same thing, his cerebral cells, that more than others he is depressed thereby and as a matter of course many of his symptoms follow. The trouble may arise elsewhere than in the stomach. Many have sought to divide up neurasthenia according to the part conspicuously affected. Thus we hear of, Cardiac, of Sexual, of Spinal neurasthenia, according to the supposed fons et origo mali. We likewise read of Cerebrasthenia, and of Myelasthenia according to whether the symptoms are more prominently cerebral or spinal in origin. I suspect, however, that all this leads to confusion, and may hide the main issue. Neurasthenia is not so much an entity as a syndrome, "a symptom-group."

The nervous system right from cortical cell to farthest end organ is one, not many.

And indeed it is matter for surprise that we have so long quietly passed by the influence exerted by the mind in all diseased states and especially in the functional neuroses. The result being that much of the work which should fall to the lot of the medical man is handed over to charlatan and to quack. But we are awakening and Glasgow University herself is about to study Psychology in real earnest.

The danger, however, comes when we set up Psychology as a rival and not as an adjunct to other methods. There is engendered a disposition to set down effects produced by well-recognised methods hitherto employed, to the action of the mind only, and the results are often deplorable. Moreover, to consider the mental factor only, important, as it will be seen I hold this to be, is too often to ignore the part performed by the blood and metabolism in the maladies concerned, the pendulum swings in the opposite direction.

One of the ablest books upon the question of Psychotherapy and its applicability to the psychoneuroses is by Dubois of Berne. Dubois, I venture to maintain carries us a little farther, than in the present state of our knowledge is legitimate. We know, comparatively, so very little about the intimate changes which take place in the brain cell in health and in disease, not to speak of their

relationship to psychology that we are hardly justified in excluvively making use of means which at best are problematical. Dubois declares:- "I dare to say that 90% of dyspeptics are psychoneurotics. To limit the diet and treat the stomach is wrong, and may render the disease incurable by fixing the attention on the part."

Nor must we forget that whatever may be averred from the specialist's point of view, the dangers of such teaching in the direction of ill-considered diagnoses are sufficiently obvious in the case of the ordinary medical man. The strength, however, of the position of Dubois lies in the fact that so many patients are treated solely in reference to the organ evidently damaged. All the modern appliances in all their perfection for the elucidation of the morbid condition are called into play. But the indictment of Dubios is that the "mentality" is systematically ignored.

"There are no somatic phenomena, however slight they may be, that have no influence on our mentality, and above all there is no movement of the mind without its echo on the organism.." It is childish, he says, to look for the cause of a purely psychic condition in the splanchnic area. "Exaggerated suggestibility" is at the foundation of the trouble. The accidental happenings in life come to all of us, such as trauma, fatigue, or functional disease, but

they cannot do permanent damage because we immediately are enabled to throw off the effects by an effort of will. The neurasthenic gets frightened, his mind dwells upon his condition, he exaggerates symptoms. This "mentality" has to be reckoned with in all the neuroses, which in reality are psychopathics, whether the condition be due to congenital or to acquired predisposition.

NEURASTHENIA AND INSANITY.

The fact that the neuroses, hysteria and neurasthenia are found on the "borderland" of insanity and that not a few cross it, ought to give to them more importance in our study of disease than some are disposed to grant to them. If as Savill avers, "Neurasthenia is the first step to madness in a certain number of cases," and if further as insisted upon by Möbius, neurasthenia is the original source from which there may spring, hysteria, hystero-neurasthenia, hypochondriasis, or melancholia, then it is desirable that we should give more heed than is our wont to these so called functional ailments.

Melancholia is a well-nigh hopeless condition,

neurasthenia is eminently amenable to wisely considered scientific treatment.

Here one must remember the primal importance of prophylaxis.

Fresh air, sunlight, good food, properly regulated exercise, these are wisely insisted upon as indispensable to the development of the "mens sana in corpore sano," but the phrase "Hygiene of the Mind" strikes many as novel, and comes with something akin to surprise.

Yet we are slowly learning that the brain cannot with impunity be ignored in our efforts to provide the growing child with that resistance which will enable it to front the crises of its life, and to pass through them unscathed.

*The brain of the new-born infant is proportionately larger than in the adult, that proportion being as 15 to 1. It weighs at birth 13.8 ozs. and at maturity 49.5 ozs. Its growth is active up to the eighth year, when it attains, says Clouston, almost its full weight. "The brain in childhood is of large bulk but miniature in structure and function." The tissues are there "in the rough," but as yet there is no connection. Only at twenty-five is the process complete. "During adolescence, from fifteen to

*Rotch: Pediatries: p.29.

twenty-five, the brain hardly grows in bulk, but is transformed from a lower to a higher plane in a remarkable way." Clouston rightly insists upon the study of childhood, the formative period of the brain-cell. The question, then, comes to be whether anything may be done in early life to strengthen the great inhibitory centres which apparently have assigned to them the function of control over other and lower centres?

The answer is beyond doubt in the affirmative. The modus operandi is a more complex problem. The matter involves much that is scarcely germane to this paper, such as infant feeding, the care of the dentition periods, and of puberty and adolescence. The occupation to be followed in the case of the youth must receive attention. Psychology is not, as yet, among the exact sciences, but it rightly provides us with the conception that in most persons there resides some power of inhibition which, properly strengthened and directed, will keep under due control that suggestibility which is so outstanding a characteristic in such ailments as hysteria and neurasthenia. With all our belief in the efficacy of treatment by drugs, one has betimes to recognise that our visit may be of more value than our physic, and that some people do not react to "tonics." If

many such people are handicapped by their heredity, the reasons for their patient management are tenfold strengthened.

In hysteria the part played by heredity is often in striking contrast to what occurs in neurasthenia.

For example, in a case of severe hysteria which I had the opportunity of observing, one elicited a typical history. The patient's father died from general paralysis. Of four brothers, three are subject to attacks of melancholia; an aunt of the patient had a severe attack of melancholia at the climacteric.

In neurasthenia the history is different. Seldom can one trace a history of insanity. Usually I have found one or both parents "nervous." There may be a history of other neuroses, such as asthma, migraine, osteo-arthritis, chorea, or hay-fever. Alcoholism one can often trace and not seldom tuberculosis. Neurasthenia, therefore, may be held to provide a hopeful field from this point of view, inasmuch as something may be done to strengthen what is weak in the nervous system of such people.

On all hands we are told insanity is on the increase.

Savage deals with this question in his recent

Lumleian lectures.

In England and Wales in 1906 the proportion of insane persons to the population was 35.31 per 10,000, whereas in 1859 it was only 18.64. He significantly adds "I regret to say the recovery rate has not increased in any way proportionate to the humanity of the treatment."

All that mortal power can do is in our day done for the insane, but in how many is it not true that the mischief is irreparable. Might the results not be better if we began at the other end and gave our efforts to prevention. Pari passu with this increase in insanity there has been an increase of nervousness or neurasthenia.

The hurry, worry and rush of modern life are incriminated in this connection, from the day of Beard until now. Among Beard's indictments was that the Americans had lost the capacity for tears and laughter, meaning thereby that rigid repression of natural outlets had its dire results in the nerve centres. Today the same thing is abundantly true, only the conditions would appear to be getting worse.

If we are to relieve our neurasthenics we must preach to them the gospel of rest, mental and physical, and of relaxation. We must know their manner of life at home

and from home. We must acquaint ourselves with the patient's view-point in all things. Individuals must be studied, not merely cases.

Thus his obsessions have to be considered, for some of them are dangerously near the delusions and hallucinations of the insane. Suicide is relatively uncommon, but it may occur. It is easy to see how some of the "Phobias" of which we hear so much may lead on to self-destruction.

Among these one often finds the fear of insanity itself, a common expression being, "I am afraid I am going out of my mind." These fears are of many kinds. Two may be referred to as connected with this particular aspect of the subject.

Anthrophobia, of a fear of society, may be present, and in its worst form comes very near to the a-social instincts of the insane. Beard mentions the case of a man who was haunted by a fear of contamination, so that he was always washing his hands, and never put on his clothes in the morning until he had shaken them over the window. I, myself, had a patient whose mind so dwelt upon the sufferings of the Founder of Christianity at the Crucifixion, which she had heard vividly described by a clergyman, that never afterwards could she enter a Church.

These obsessions are not insanity. These persons are harmless and at large; they may be reasoned with and out of their "fears," and by treatment may be cured. Yet some of them mark the beginnings of an unsound mind and therefore are significant.

The neurasthenic, moreover, is hopeless and he is sleepless. The depression is due to his sense of chronic unfitness for the task of living. In the morning he awakes tired, having spent the night tossing, with snatches of sleep, or he sleeps but is unrefreshed. He is easily fatigued during the day, the least over-exertion knocks him over. Not insane, far it may be from it, the neurasthenic is yet mentally out of gear, and this being so, small aches and pains and sensations frighten him. He broods, and easily becomes hypochondriacal, the one condition shading off into the other.

NEURASTHENIA IN ITS RELATION TO THE CENTRAL NERVOUS SYSTEM.

We are now in a position, I think, to ask ourselves this question: What, then, is Neurasthenia?

Now, whatever criticisms may be passed upon the name, and they have been many, it unquestionably fixes attention upon the essential factor in the disease, viz. a lack of nerve power. The nervous system must be always taken into our consideration. Here lies the defect. This being conceded, I believe we shall get nearer the facts the broader our ideas may be. A limited view of the condition is necessarily mistaken. I am entirely in agreement with those who insist upon its aetiology being, like its symptomatology, complex. No single cause will adequately explain the condition. This indeed is simply what we might expect. It is here, as with disease in general, we must reckon with both predisposing and exciting causes.

We must in the first place consider all that is involved in the inherent constitution of the individual. This brings us to the question of heredity direct and indirect, as also to the possible adverse influences to which the embryo may be exposed in utero.

The more we enquire into the causes of neurasthenia and the allied neuroses, the more we shall find we can trace a more or less distinct neuropathic heredity. In neurasthenia, this seldom, as I have said, takes the form of grave disease, one finds more often "Nervousness", in one or both parents.

We must start then, with the conception that neurasthenia is a disease of the nervous system in its very essence. We are as yet ignorant, it is true, of the nature of the defect in the cerebro-spinal centres. If lesion there be, our methods of investigation have as yet failed to discover it. Hence neurasthenia, like hysteria, epilepsy, Sydenham's Chorea, and other neuroses, must meanwhile be classified among the functional diseases. Their pathology in the sense of morbid anatomy awaits demonstration. We may speculate in this province, more we cannot do. This term functional, however, simply means we do not know, and with ever-increasing knowledge of the normal and morbid anatomy and physiology of the nervous system, will become more and more restricted in its use.

In all questions dealing with disease in its ever-varying manifestations, the nervous system must take and maintain a foremost place. What becomes of secretion, of excretion, of nutrition, of will, emotion, intellect, if

the hold upon them of the great controlling centres is relaxed or defective?

The heart, for example, is under the control of two sets of nerves, the vagus and the nerves coming through the sympathetic chain. The effect of the former of these upon the heart beat is inhibitory, the heart is slowed, while by means of the latter the rate is increased, and the systole is strengthened. These effects are seen constantly in operation in every-day life, and are produced by reflex action through the medullary centre. Palpitation often means not organic heart disease, but interference with the beat, brought about reflexly through these two sets of nerve fibres.

In intimate association with the heart is the great vascular system, with its vaso-motor nerves, governing the calibre of the vessels. As is well known these nerves contain vaso-constrictor fibres, whose function it is to maintain that tone of the arteries and arterioles which is so necessary to the efficient carrying on of the circulation, and variations in which profoundly modify the working of each organ and tissue.

A vast amount of interesting work has been done in this field of late years. Our knowledge of the Physiology of the circulation has advanced, while pari passu we have

had many important contributions to the study of blood pressure.

Mention may here be made of the interesting experiments of Leonard Hill, in which he showed how the blood-supply to the brain, whose vessels are apparently without vaso-motor nerves, is regulated by the arterioles of the great splanchnic area, under the influence of the vaso-motor centre in the medulla.

In the muscular system likewise we have a further example of the necessity of "tone," regulated by the nervous system. Remove this, for example, from a hollow organ such as the stomach, and there is produced a condition giving rise both locally and by absorption to evil results. The same government of the nervous system is manifest when we turn to secretion. Indeed among many who like Dubois insist upon the Psychic factor in disease, the nervous system plays the principal rôle in all the minute changes in secretion. Thus he declares we are all wrong in saying a man is irritable because his stomach is out of order, rather it is that his stomach is wrong on account of his irritability.

Certainly we have come to acknowledge, perhaps as never before, the influence of the mental state upon all

disorders, for example, of the gastro-intestinal tract. The interesting experiments of Pawlow of St. Petersburg upon digestion have demonstrated the dependence of appetite upon the normal working of the nerve supply of the stomach.

"Pure gastric juice may be collected from a Pawlow fistula, 12-15 hours after a meal, by giving the animal a fictitious meal. The food which is eaten does not reach the stomach but drops from an oesophageal fistula. The process of feeding induces reflexly an abundant secretion of gastric juice which can be collected in a pure condition. A dog will go on feeding voraciously in this manner for hours and in the course of an hour 200 c.c. to 300 c.c. may be collected."*

In the forefront of all the questions raised in our discussion of neurasthenia must be placed the nervous system peculiar to the individual concerned.

L'hystérie fille de l'idée, doit guérir par l'idée, la Neurasthenie fille de la fatigue, doit guérir par la médication tonique, méthodiquement appliquée. These words of de Fleury serve, I think, to keep before us a clear conception of what is essential in neurasthenia and of its distinction from hysteria.

*Schafer: Physiology: p. 539.

Neurasthenia is "The Fatigue Neurosis." We have to do with exhaustion of the nerve cell.

We have reviewed the causes operating to produce this exhaustion and have insisted upon the all-important rôle to be assigned to a primary defect in the cell itself, resulting from hereditary, congenital, or acquired peculiarities.

The conception, then, being that the signs are the result of exhaustion of nerve tissues, do we know what this means? What changes take place in the neuron as the result of exhaustion? Of this we know but little.

A study, however, of what is known of the structure and physiology of the nerve cell may give hints of at least theoretical value.

The neuron theory has thrown light upon the intimate network of cells and their fibrils which make up the tissue of brain and cord. Hodge has described changes in the nerve cell, in man and the bee, the result of fatigue. He found changes in the nucleus and cell-body, pigmentation and vacuolation of protoplasm, and disappearance of some of the cells.

*In this connection it is of interest to note that Marinesco and Lugard, with other authorities, hold that the

Ford Robertson: Pathology in relation to Mental Diseases. p.218 et seq.

stimulus arriving at the cell by the afferent nerve is there "modified and reinforced before being discharged by way of the axon." "Trophism," the same writer maintains, "is a reflex action propagated from one neuron to another, and continued functional excitation is indispensable to trophic activity in the nerve-cell."

Each neuron, while in a sense an independent unit, is yet for its efficient working dependent upon the integrity of all the rest.

Various terms are employed to denote the changes in the cell. Some speak of a "molecular disturbance." Allbutt uses the phrase "dislocation of neurons." In some such way we must conceive of the cell being so altered, but we may not do more than theorise, as even the minute normal histology of the cell is still in dispute.

NEURASTHENIA IN ITS RELATION TO OTHER DISEASES.

Neurasthenia is so often found in conjunction with, and so constantly shades into other morbid conditions, that it is not surprising that their separation has at times been a matter of difficulty. Indeed some of these

associated conditions have been erroneously considered to be the cause of the trouble in the central nervous system. The separation of these, then, is essential. Anaemia, for example, has again and again been credited as the cause of the neurasthenic condition. But surely with little reason. Profound anaemia often exists without the symptoms characteristic of neurasthenia. In men, moreover, we constantly see neurasthenia without any evidence of anaemia, indeed the patient may appear ruddy and well nourished. In women, in these cases, it is true, we often find a low haemoglobin and corpuscular value, but this is usually associated with constipation and, it may be, with disease of the pelvic organs. The anaemia, then, is not the cause of the neurasthenia, albeit the blood in all our systems of therapeutics must not be neglected.

Further, as has been pointed out, neurasthenia is continually found with a change in the constitution of the blood, a toxaemia. Search, therefore, must be made for a source of septic or other toxic infection. The gastro-intestinal tract must be interrogated. The teeth and mouth are examined. One of my patients was relieved by the treatment of an old-standing Pyorrhoea alveolaris. Another patient, a young man, suffering from the neurasthenia of

adolescence, was only relieved after carefully applied dentistry. (The case will be more fully described later.)

But the stomach and the intestine may be the source of the mischief. In all affections of the stomach attended by pain, as are so many of the neuroses, the possibility of organic disease must be considered. In neurasthenia one often finds a history of pain and discomforts in the stomach and ulcer has to be excluded.

The question of the association of neurasthenia with mucous colitis, "colica mucosa," is an important point. Upon it the interesting monograph of von Noorden may be consulted. In these patients chronic constipation is the rule, the condition having persisted over a number of years. The malady in question is a "secretion neurosis," and may be found not only in neurasthenia but also in hysteria and in hypochondriasis. It is characterised by acute paroxysmal abdominal pain, with the passage of mucous strands, or it may be custs of the bowel, the large intestine being the affected part.

The point as to which is the primary condition has been in dispute. There would appear to be little doubt, however, that the primary cause is to be sought in the nervous system.

Lithaemia, arthritism, the gouty diathesis, are all terms applied to a group of symptoms which are frequently met with. The subjects are usually men of plethoric habit, who live well and take little exercise. They have attacks, often periodic, in which they suffer from "biliousness," with headache, similar to migraine. They are irritable, the bowels are constipated, the pulse of high tension, the cardiac second sound accentuated. The urine presents on standing a copious deposit of urates, and contains a trace of albumen. They are liable to phlebitis, or thrombosis. Now such a condition is not neurasthenia and between the two affections a distinction must be drawn. If only the lithaemic subject takes an efficient aperient, he may quickly be well, and may remain in comparative well-being if he secures an efficient regular evacuation, and regulates his diet, especially in reference to the purin-producing foods and to alcohol.

It may be that these two diseases are difficult to distinguish, but attention to history, to physical signs, and above all to the results of treatment, will make matters clear.

Neurasthenia it must be insisted upon is not an ill-defined mass of complaints with but little scientific sense and less reason. If we go deep enough we come upon

its essential nature, a defect in the nerve cell or its function. Nevertheless, arising from any organ we may have well-defined symptoms which may mislead, by masking what is the actual disease. Such symptoms may be relieved for a time by treatment directed to the part concerned, but the neurasthenia which lies beneath will remain.

The heart, for example, may occupy the foreground of the picture, as in a case under my care, and it may be a difficult question as to whether we are dealing with a functional or an organic heart lesion. Certainly, I believe, many of the symptoms of neurasthenia are found in organic heart disease, such as muscular fatigue, irritability, loss of memory, lack of the power of concentration, depression and so forth, all due to irregular blood supply to the brain and higher centres. Moreover, palpitation, syncopes, anginoid attacks, are very common in neurasthenia. Yet true neurasthenia should be unassociated with heart disease, although I have seen at least one case in which I concluded that the nervous trouble was primary, the patient being apparently quite unconscious of any cardiac mischief. In pseudo-angina, we may have a sense of anxiety, a gripping over the cardiac area, with pains in the arms, and it may necessitate time and watching to come to a conclusion, as between the simple and the much more serious disease, the

presence of other symptoms of neurasthenia being of help in the diagnosis.

In a number of other diseases we may have manifestations difficult to separate from those found in neurasthenia and due to a variety of causes. We see this in Bright's disease, in tuberculosis, in diabetes mellitus, in syphilis, in chronic alcoholism.

Graves's disease before the exophthalmos shows itself may so closely simulate neurasthenia as that the symptoms are all but identical. Time alone may serve to distinguish them. In this city enlargement of the thyroid gland is frequent, and unassociated with any symptoms. In several, however, that I have seen, tachycardia was present, with nervousness, and sometimes, as in one case, with tremor. In reference to the latter, incipient Graves's disease would seem to be the condition, although meanwhile there is no exophthalmos. It is well known, however, that the latter symptom may only appear after the other signs have lasted for some time.

The nervous exhaustion, consequent upon a long illness, must be considered here. Typhoid fever, acute rheumatism, and influenza may be alluded to. We have to consider not only the mal-nutrition of tissue following upon a long illness, but the work of organisms with their

toxins, which as in the case of influenza would appear to exercise a specific influence upon nerve tissue. Are such cases to be diagnosed as neurasthenia? Strictly the reply should be in the negative. Yet if we have these supervening in an hereditarily predisposed person, the neurasthenia will be intractable.

Alcohol is but one of the drugs, the abuse of which may give rise to symptoms analogous to neurasthenia; its evil effects have already been alluded to. One of the worst examples of neurosis I have ever seen was that of a young man, resulting from excessive cigarette smoking. All confidence in himself was completely in abeyance. He was irritable, sleepless, tremulous, voluble in conversation, with vacant, unintelligible stare. His extremities were blue and cold. He complained of "palpitation of the heart", the rate of which was increased and the beat irregularly intermittent. He complained that he was unable to stand from giddiness. His tongue was dry and coated, his bowels constipated. He had smoked as many as 50 cigarettes in a day.

Idiosyncrasy would seem to be important in such cases. What to one man would be excess may not be in the case of his fellow. Personally, I can vouch for the effect of even one cigarette upon my own cardiac action,

albeit the heart is not normal. The results, however, of one or at most two cigarettes appear in unpleasant irregularity of the heart's action, with stabbing pains in the cardiac region.

On the other hand, on ship-board some years ago, one had the opportunity of observing marked tolerance to the drug. For a gentleman there, of Greek nationality, boasted that his allowance regularly amounted to 50 cigarettes per diem, and he appeared comfortable and enjoyed life.

An interesting series of papers upon this question may be consulted in "The Practitioner" for July 1905.

A further example of differing tolerance is found in the effects of tea and coffee. The effects of these substances upon the central nervous system and on the circulation is very marked. Evidence of this is found in the sleeplessness common after a cup of coffee. In this respect, however, there are marked differences, some persons being unaffected in this way. In many the influence of coffee upon the heart is manifest in palpitation and uneasy sensations of oppression. Coffee, it is well known, acts also upon the vaso-motor centre, causing a primary rise with an ultimate fall in blood pressure.

We have yet to consider that neurasthenia is closely related, as one would expect, to diseases of the nervous system, organic and functional.

Reference has already been made to hysteria. One may wonder how the one neurosis could ever have been confused with the other, for their symptoms seem quite distinct. In hysteria the hemi-anaesthesia or the patchy anaesthesia met with, the pareses and paralyses, the contracted visual fields, the convulsions, present a sufficiently distinctive picture.

The hypochondriac differs from the neurasthenic in the one all important respect that he is outside the sphere of our arguments. His mind is fixed upon one part - it is a case of delusion. Tell him he is right, and he will go elsewhere; tell the neurasthenic the same and he will delight to believe you. Yet the proximity of neurasthenia to hypochondriasis is an every-day observation. The man who sits down in my consulting-room, shoots out his hand, demands that his pulse be felt, and is for ever thinking of its "intermittent" beat, is dangerously near the dividing line.

From organic diseases of the cord and brain, neurasthenia and hysteria must be most carefully separated. The general neuralgic pains and paraesthesiaewhen severe in

the legs and thighs of neurasthenic patients must be distinguished from the lightning pains of Locomotor ataxia. The deep reflexes are usually exaggerated in neurasthenia; they are never wanting, and this sign alone would be sufficient. In addition we have the Argyle-Robertson pupil in Locomotor-ataxy, although one finds in neurasthenia a certain sluggishness of the reaction to light.

General Paralysis is another disease of the nervous system which in its early characters may somewhat resemble neurasthenia. The tremor of lips and tongue, the character of the speech, the eye phenomena, and the bearing and changes in character, should enable one to arrive at a correct diagnosis.

Multiple sclerosis is extremely difficult in its early stages to diagnose from hysteria or neurasthenia. The matter is simplicity itself when the optic atrophy, the nystagmus, and the volitional tremor are present, but the onset of multiple selerosis is slow, and I suppose experts in neurology are again and again unable to arrive at a definite conclusion. In physical examination phthisis must be excluded, as in this disease the symptoms may resemble those complained of in neurasthenia.

THE URINE IN NEURASTHENIA.

Is there anything characteristic to be found in the urine of those suffering from neurasthenia? The question is not yet settled.

In an analysis of 60 cases given by de Fleury he sums up his conclusions as follows:-

1. A diminution in quantity in 24 hours, with increased specific gravity.
2. An excess of uric acid in relation to urea.
3. An excess of earthy phosphates in relation to alkaline phosphates.
4. An excess of chlorides.
5. A low oxidation co-efficient.

These results, however, differ from those obtained by other observers.

Thus an increase in quantity, with a low specific gravity, would seem to be frequent, and indeed in this respect there are great variations in individual cases, the flow being at times scanty, and again above normal.

The significance of an excess of phosphates, frequently found in the urine of neurasthenica, is not known.

It has been said to be a characteristic feature; some, however, as Oppenheim, deny this.

In normal urine phosphoric acid occurs in combination with potassium, sodium, and ammonium, forming the alkaline phosphates, and with calcium and magnesium, forming the earthy phosphates. Normally the proportion of alkaline to earthy phosphates is 3-1. Urine, if alkaline or faintly acid, often appears turbid or milky when passed, this deposit being due to the precipitation of earthy phosphates. Such a precipitation may be due to diet, or to a drug which is being taken. This condition of "phosphaturia" in neurasthenia was supposed to indicate an excess of phosphoric acid in the urine. The excess, according to this theory, resulted from an abnormal destruction of such fatty bodies as lecithin and protagon, found in the tissues of the central nervous system; hence the administration in such cases of phosphoric acid, and the acid phosphates. So far, however, from the phosphoric acid being in excess, it has been found actually below normal. The normal excretion of phosphoric acid (P_2O_5) in 24 hours, averages 3·5 grms. *Panek, quoted by Mann, found in two cases of neurasthenia, that the phosphoric acid was reduced to 1·8 - 2·1 grms., while the calcium

*Mann: Physiology and Pathology of the Urine. p.p.21.266.

excretion was increased to ·51 - ·56 grms., the magnesium excretion was not materially changed, while organically combined phosphorus was only found in trace. The nitrogen excretion was diminished. Iwanoff obtained similar results. Further, in neurasthenia, the normal proportion, viz. 3-1, between alkaline and earthy phosphates, is disturbed by the increase in the earthy phosphates, especially calcium, so that the proportion may be 1-1.

The condition called "phosphaturia", then, seems to be caused by an increased excretion of the earthy phosphates, due to faulty metabolism here, with a decrease in the phosphoric acid. The excretion of phosphoric acid will of course vary with the diet, its nature and quantity. Certain pathological states of the urine may here be alluded to, inasmuch as their symptoms may be analogous to those found in neurasthenia.

A condition is described by the term "phosphatic diabetes" in which, with polyuria, there is sometimes an enormous increase in the excretion of phosphates, the amount reaching as high as 20 grms. in 24 hours. In these cases the urea also is increased. *Ralfe gives the symptoms as follows, in eighteen cases: "Great nervous irritability, derangements of digestion, great emaciation,

*Ralfe: Allbutt's Sys. of Med. Vol. III. p. 250.

and severe aching pains in loins and back, especially affecting the pelvic viscera."

In Azoturia, there is again a slight increase in the phosphates, but the essence of the disease is a great increase of urea in the urine, with polyuria. The feeling of weariness and languor which, according to Ralfe, is an early symptom, might lead to confusion with neurasthenia. The disease is most frequently met with in men, and is rare.

A condition with analogous symptoms is described under the term Baruria, in which "there is a general "increase throughout of the solid constituents of the "urine of one not more than of another, whilst the aqueous "solutions remain tolerably constant. The S.G. may run "between 1.038, and 1.045, and at that it may remain for "several days." Oxaluria has been described in association with neurasthenia. In the urine of some persons there is found an excessive excretion of oxalate of lime forming a characteristic deposit. Associated therewith are pains in the loins and back, nervousness and loss of flesh. It is held to be an instance of perverted metabolism, in which the oxalic acid found in the urine may or may not be in excess.

The presence in the urine of neurasthenica of bodies arising from putrefaction in the intestinal canal is

is common. In the series of cases alluded to above, de Fleury found Indican or Skatol present in 73%. It is suggested by Dixon Mann that bodies as yet unrecognised are in such cases absorbed from the bowel, and give rise to the symptoms of mental depression found in neurasthenia.

*Herter induced persons to take pure crystals of indol, in order to test its pathological properties. The susceptibility of individuals, he concludes, varies. "The continual absorption of enough indol to yield a constant strong reaction in the urine is capable of inducing neurasthenic symptoms."

Albumen is not present, as a rule, in the urine in neurasthenia; if persistently so present, some concomitant disease is to be suspected. In only one of my series did I find a trace of albumen, doubtless due to senile arterio-sclerosis, with fibroid changes in the kidney.

Glycosuria is more frequent, and may be repeatedly observed, without the symptoms of diabetes, as in a case cited by Clifford Allbutt. In none of my cases did I find it.

The reaction of the urine in neurasthenia is alkaline or faintly acid. Sometimes an amphoteric reaction

*Herter: Lectures on Chemical Pathology. p.213.

is present. Faintly acid to litmus paper was the character in my patients. The quantity and specific gravity are variously stated by various writers. De Fleury found the amount diminished in 60%, increased in 14%, normal in 20%, the density he found increased in 59%, diminished in 11%, normal in 30%.

Usually, the urine in neurasthenia is stated to be pale, plentiful, and of low specific gravity.

The specific gravity range in my cases was from 1007 to 1022.

I have requested my patients to provide me with a specimen of the twenty-four hours' excretion, and have had the opportunity in 15 of the cases of making a quantitative analysis of the phosphoric acid. (P_2O_5). In each case several examinations were made as shown in the table. The procedure described in "Clinical Methods" by Hutchison and Rainy, has been followed, thus:- To 50 c.c. of the urine there is added 5 c.c. of an acetic acid solution of acetate of soda, and a few drops of tincture of cochineal, as an indicator. This mixture is heated in a porcelain dish over wire gauze, "just short of boiling." Stirring all the time one now runs in cautiously a standard solution of uranium nitrate, until a greenish precipitate falls and

persists, this being indicative "that the uranium has united with all the phosphoric acid present and is beginning to react with the cochineal." The following table gives the results obtained by me:-

T A B L E I I.

THE RESULTS OF A QUANTITATIVE ANALYSIS OF THE PHOSPHORIC ACID PRESENT IN THE URINE IN NEURASTHENIA.

Case.	Quantity.	P_2O_5.
I.	1700 c.c.	2.38 grms.
	1500 c.c.	2.25 ,,
	1300 c.c.	2.34 ,,
II.	2000 c.c.	4 ,,
	2000 c.c.	3 ,,
III.	1000 c.c.	3.5 ,,
	1160 c.c.	2 ,,
	1000 c.c.	3 ,,
	1000 c.c.	2.2 ,,
IV.	1500 c.c.	1.5 ,,
	1600 c.c.	1.6 ,,
V.	1500 c.c.	.3 ,,
VI.	1300 c.c.	1.56 ,,
	1500 c.c.	2.25 ,,
	1700 c.c.	1.7 ,,
	1100 c.c.	1.6 ,,
IX.	1500 c.c.	7.5 grms.
,,	1600 c.c.	3.5 ,,
,,	1500 c.c.	1.5 ,,
X.	2000 c.c.	1.6 ,,
,,	1000 c.c.	.2 ,,
,,	1300 c.c.	1.9 ,,
XI.	1500 c.c.	3.5 ,,
,,	1000 c.c.	1.2 ,,
,,	1500 c.c.	3.5 ,,
XII.	1500 c.c.	6 ,,
XIV.	1300 c.c.	1.8 ,,
,,	2000 c.c.	2 ,,
,,	1000 c.c.	1.3 ,,
,,	1500 c.c.	1.95 ,,
XV.	2000 c.c.	1 ,,
,,	2000 c.c.	.5 ,,
,,	2300 c.c.	2.76 ,,
,,	2000 c.c.	1.5 ,,
XVII.	1330 c.c.	4.5 ,,
,,	1500 c.c.	3.75 ,,
,,	3330 c.c.	5.1 ,,
,,	1500 c.c.	1.9 ,,
XIX.	1300 c.c.	2.7 ,,
,,	1500 c.c.	3 ,,
,,	1300 c.c.	2.3 ,,
XX.	1330 c.c.	4 ,,
,,	1330 c.c.	2 ,,
,,	1500 c.c.	3.2 ,,
,,	1330 c.c.	2.6 ,,

In discussing these figures one may draw attention to Case IX in which the first examination showed 7.5 grms. P_2O_5 in 24 hours, a marked increase. It is to be noted that the specimen was obtained during one of the nervous attacks, to which the patient was subject. The lowest figure here was 1.5 grms. Three specimens were examined. In 5 patients the figure was uniformly low, being in seventeen examinations below 2 grms. in 24 hours. The lowest figure was .2 grms., one was .5 grms., one was 1 grm. In a case of hysteria I made two quantitative analyses; one showed only .3, the other 1.3 grms. In the remaining cases the excretion of Phosphoric acid was within normal limits.

These analyses would appear to be confirmatory of the fact that the excretion of phosphoric acid may be below normal. In one case only could the excretion be said to be increased.

NOTES

on

TWENTY CASES

of

NEURASTHENIA.

CASE I. Mr. W. aged 58. Merchant.

In neurasthenia, symptoms to be referred to the cardio-vascular system are in all patients exceedingly common. According to Savill, however, it is especially in toxaemic neurasthenia that such symptoms are marked. CASES I to IV of my series will be seen to exemplify this fact.

This patient is of interest inasmuch as one of his sons is a neurasthenic, while another has consulted me in a fright, on account of urticaria, and is certainly of neurotic temperament.

I have known this gentleman for the last seven years. He is of spare, wiry build, and he periodically comes to me to be re-assured as to his health, especially as regards his heart. On entering my room he shoots out his wrist, exclaiming, "Feel him now"! meaning thereby that his heart is the source of his trouble. "Intermittent beat" is his incessant dirge, as he anxiously spreads his fingers over his radial artery, and tearing aside his shirt and collar, demands that one should once again examine his heart. So prominent is this "fear" of heart disease, that

it is easy to see how close the patient comes to hypochondriasis. He collects the offertory in church, and is in dread until he reaches his seat, - the people frighten him. For a like reason he fails at the telephone. In a public urinal, micturition is often quite impossible. In business he is incapable of sustained mental effort, and his memory is defective. He complains of "numbness" on the top of his head. Pains in the legs and back, with "cold, creeping feelings" are common. In the night he will awake in a terror to find his heart beating loudly and with "intermittent beat", and his body bathed in a cold sweat. He has distressing night erections. He complains that the "blood rushes to the surface and he feels hot all over." He has consulted me on several occasions on account of urticaria, with horrid heat and itching, at which times dermography is well illustrated. Now I have come to associate this man's periodic exacerbations, for which he consults me, to gastric disorder, invariably due to some error in diet. Like most total abstainers he partakes freely of carbohydrates, and is particularly partial to cakes etc. Although the heart on such occasions usually occupies his entire mental field, yet I usually find that he has voluntarily produced emesis by putting his finger into his gullet. His tongue is big, flabby, coated, and

deeply fissured.

The abdominal viscera are normal. So insistent is the heart complaint that one examines with care to find any evidence of organic disease. The result is entirely negative. Strangely enough I have almost never found the rate even raised, 72 to 80 being the rule. Seldom has one heard that "missed beat" of which the complaint is so persistent. Indeed the entire absence of signs of disease on physical examination is in striking contrast to the patient's insistence in his false idea. When he ascends my stairs and sits down, the result of the exercise is hardly recognisable.

In neurasthenia the heart is, in the so-called Cardiac Form at least, subject to variations in rate, arising from trivial causes. Usually the rate is quickened, and there may be visible pulsation of arteries. We may have attacks of pseudo-angina, as in the patient next to be noted. On examining the nervous system in this case one finds some points of interest.

There is a fine tremor of the hands on active movement, and of the eye-lids when asked to stand with eyes closed. On tapping the skin in front of the chest there is produced a muscular fibrillary wave. There is a hypersensitive spot of which the patient always complains in

examining the heart, situated to the inner side of and below the nipple, rather nearer the mid-line than the apex beat. The patellar reflexes are much exaggerated, the superficial reflexes normal. There is no ankle clonus. The special senses are natural.

This patient belongs to that type which with possibly long life will remain nervous throughout. One, therefore, only expects to relieve temporarily in his exacerbations by attention to his gastro-intestinal disorder. The only thing which will satisfy him is a more or less regular careful examination of his heart and circulation, that by argument and explanation he may be assured all is well. He lives a tolerably happy life, in spite of his fears.

The question of treatment is discussed in a separate section.

CASE II Mrs. W. aged 34.

Neurasthenia is not the monopoly of the rich and leisured classes. It is found amongst the poor, and the working classes. This is a case in point.

The patient has always had a hard life. Her father was a "hard drinker", and until marriage she was practically the sole breadwinner of the family. After marriage she continued to work in the mill.

She would seem to have been well until February 1906, when being pregnant, she took some medicine and miscarried. Then, definitely, her nervous miseries began. I attended her in this illness. Constant dread and depression, are the features in this patient, together with "flushings", and "queer turns". These latter, are thus described: The attack usually takes place when she is out walking. She has a sensation of "fainting", with "fluttering" at the heart, she "trembles all over", "feels as if I were going to die", would fall if not assisted, but has never lost consciousness. She requires help in order to reach home.

These attacks do not seem to be associated with pain, either in the cardiac area, or in the arms, but she has a "funny feeling" all over. She complains of flatulence,

with vague abdominal pains, and has had at least one attack in which "pieces of jelly" appeared in the stools with diarrhoea. She is habitually constipated. She is a pale, ill-nourished woman, whose feelings gain the mastery as she recites her woes.

Upon examination one notes accentuation of the cardiac second sound at the base. The pulse is of high tension. There is no arterio-sclerosis. The attacks of pseudo-angina dominate the scene in this woman's case. That they are secondary to, and depend upon vaso-constriction, I am inclined to believe, the latter being reflex in origin, from the gastro-intestinal tract. Probably this cause of the pseudo-angina in neurasthenia, is more common than we are inclined to believe.

The pain, in these attacks in neurasthenia may be severe, and may radiate as in true angina pectoris, into the left or into both arms.

Her attacks made this patient's existence one of continual dread. There was an evident gastro-intestinal element to be considered, evidenced by flatulence, abdominal pain, mucus in the stools and constipation in alternation with diarrhoea. To these latter symptons the treatment was directed, while the "attacks" were relieved by Trinitrin,

in tabloid (gr. 1/50). She was induced to enter hospital in the autumn of last year, where she remained for six weeks. Marked amelioration of the symptoms has followed, but her circumstances in life are scarcely favourable to a complete cure.

CASE III. Mrs. O. aged. 37.

Mrs. O. has been under my observation for some six years. She complains of dyspepsia, with flatulence so severe that at times she declares "I think I shall choke." Constipation has always been troublesome, no medicine seems to have any effect whatever. This patient's mother died from Phthisis. Menstruation has always been a source of pain and distress, the flow from the time of onset being scanty. Finally an operation was performed. At the age of 31 she married, and almost at once became pregnant. Vomiting of pregnancy was so severe as to seriously raise the question of induction of labour. Twins were born at the eighth month, one proved to be a macerated foetus, the other survived only for three days. Menstruation ceased from this time and has never recurred. Superinvolution took place and all the pelvic organs underwent shrinking.

During the last six years she has had periodic attacks of which the following is a summary. They come on with regularity each month, and are characterised by "flushings" of the face followed by extreme pallor. She "feels faint" on getting out of bed in the morning, or on sitting upright, and has "paled to the lips" but has never

lost consciousness. "Great belchings" of wind are common, and at night or in the early morning she awakes with a feeling of oppression, only relieved by getting up quantities of wind. The bowels are so obstinate that for days, notwithstanding medicine, they refuse to act. Then, on going to stool, little pieces of hard faeces are passed. Sleep is apparently sound and dreamless, but she awakes unrefreshed, and on getting out of bed she is pale, tired, depressed and miserable. During the day she improves, but as night approaches she suddenly collapses from fatigue. She is in nervous dread of being alone. The nose, mouth and throat, she says, are always dry. She does not perspire.

Hearing is indifferent, and at times she complains of a "confused feeling" in her head and ears. The eyes are weak and easily tired so that she is unable to sew or read for long at one time. From time to time she has suffered from "stye", now affecting one eye-lid, and then another. This patient was attended by me in a severe attack of colitis, in which the evening temperature at the onset was 104°F., falling to normal next day and so remaining. Diarrhoea with straining at stool continued for some days, with pain and tenderness in the sigmoid area. At

the same time the motions contained pieces of thready mucus.

A survey of this patient, who is a little, spare, anaemic subject, revealed a severe condition of oral sepsis, arising from a pyorrhoea alveolaris of some standing, a condition of things which had not been attended to for aesthetic reasons. In the lower jaw the gum was entirely separated from the lower teeth, which were loose in their sockets, while from the edge of the gum, pus could be pressed out. The tongue was dry and rather deeply fissured.

In the attacks to which reference has been made I have noted a thready condition of the pulse with diminished rate , falling to 60. Clifford Allbutt refers to a "crimping up of the arteries with grayness of the face."

The viscera otherwise were normal. The urine is habitually below normal in amount, with a density of 1020-1025, but presents no other abnormality. I have examined the eye grounds with negative result. There is no contraction of the visual field.

Manifestly the first step in treatment was to send the patient to a dentist.

Since doing this, in November 1906, the health has improved, but the gastro-intestinal trouble, which I believe to be primary, remains. In reference to the neurosis

it is to be noted that the intervals between the attacks are now longer (April 1907) but the "flushings" and weakness persist. The influence of the premature menopause has to be considered.

It is to be noted that the mental symptoms of neurasthenia were not marked - it was, if one may so speak, a condition of general lack of nerve force, with a toxic basis. The gastric condition was doubtless associated in this case with sub-acidity and deficiency of motor function, conditions favourable to the continued virulence of toxic substances entering the stomach from the mouth, besides favouring the elaboration of such substances in the stomach itself.

The Weir-Mitchell treatment would almost certainly give excellent results and would only be necessary in a modified form, isolation being non-essential. Unfortunately this cannot well be carried out.

CASE IV. Mrs. W. aged 54.

Neurasthenia is to be separated from Migraine, but that the two neuroses may occur together is exemplified in the following case. The Family History is instructive in that the marriage was between first cousins. Migraine here as in an overwhelming proportion of the cases is hereditary, the patient's mother having been so afflicted, while the disease has recently shown itself in a daughter at the age of 26.

The facts of her personal health are these: The attacks of headache and vomiting began about her 36th. year. A year thereafter, in giving birth to her youngest child, she had violent haemorrhage, and ascribes most of her ill-health to this cause. She came under my observation in November 1901, when I was urgently called on account of violent haematemesis. This, in view of all the history and examination, was considered to be "vicarious." Since then I have seen her regularly and have watched the neurasthenia in development pari passu with the attacks of migraine. These latter have not improved with the passing of the climacteric, which, however, came late in life. At first the "attacks" were periodic, coming on every 3 or 4

weeks. "Funny feelings" in the stomach invariably preceded the attacks. There is vomiting of enormous quantities of "pure bile", with agonising headache, located at times in the left, at times in the right, and again in either temple. There is local flushing often of one ear, or in patches on the face. She is annoyed by muscae volitantes in front of the eyes, but has no other symptoms here, subjective or objective. During her attacks there is total loss of appetite, with nausea and depression. The bowels are invariably constipated. Between these attacks she, in the first instance, got along fairly well, but during the last two years the headache has been constant, with periodic exacerbation and vomiting.

The neurasthenia has developed since the illness in which I first attended her, for the bleeding determined a morbid dread of its return. In the morning her first duty is to examine the back of her tongue in the glass. "Why do I not have a clean tongue"? She has constant "funny feelings" and "throbbings" in the abdomen. She cannot go away alone, has lost confidence in herself, and is always tired. I have repeatedly examined this patient and have satisfied myself that all the viscera are normal. Pain would appear to have acted in this case as an important

exciting cause of the neurasthenic symptoms.

In reference to treatment the only point worthy of note is that I have found the plan followed by Haig to be useful in the paroxysms. He gives large doses (m ~~xxx~~) acid nit. mur. dil. in half a tumblerful of water, half an hour before the attack is due, and the same dose half an hour later.

CASE V Miss C. aet 25, Milliner.

Miss C. came to consult me in November 1906 on account of "nervousness", "pains in the back and legs", "night startings and screamings", with constipation and dyspepsia.

Until the age of seven, she appeared to be well. Then, however, she had a prolonged and severe attack of typhoid fever from which she was not expected to recover. On getting well she entered school, when at once she was attacked by scarlet fever.

Menstruation began at sixteen. At this time she had a severe fright from "seeing a policeman chasing a murderer". Her mother thinks she has not been well since this. She starts in the night and screams out. Sleep is light. Her dreams are coloured now, after eight years by the above experience, and the sight of a policeman distresses her.

At the age of eighteen she sustained a bicycle accident, which seems, however, to have been of a slight character. Her daily work entails lifting and straining. The hours are long. Her meals are taken on the premises. The family history is not without interest. Her mother, to my

knowledge, is easily depressed and neurotic. Her father died, aged 36, from "Paralysis of the Brain". Two maternal uncles died prematurely, one from "Asthma", the other from "Consumption of the Bowels". I have had this patient under observation from time to time during the last three years. She is easily depressed over trivial ailments, always feels tired, and complains of "my weak back". Headache is more or less constant. Sleep is never sound, she dreams readily, starts up in bed, and cries out. In the morning she awakes unrefreshed.

In November last she came to me on account of increased gravity of all the symptoms. In addition she now complained of a persistent pain, especially in sitting, at the tip of the coccyx. After food, she has an uneasy fullness in the stomach, coming on at varying intervals after food. There is no pain,nor has there ever been vomiting: The bowels are habitually difficult to move. As she, at this time had a morbid fear of some trouble in the reproductive organs, she consented to a pelvic examination. I found the uterus slightly retroverted but quite movable, and arrived at the conclusion that the local condition had little to do with the neurasthenia.

The treatment, therefore, consisted of prolonged rest in bed, iron in the form of Blaud's Pills, in increasing

dose, and remedies directed to the relief of the gastric-intestinal mischief. The results after six months, have been satisfactory, but she is still easily depressed at times.

In this young lady's case, I looked upon the pelvic condition as altogether secondary. She continually complained of her stomach and of constipation. We have in her case to consider the presence of "shock", coming at an impressionable age, and giving rise to sleeplessness and timidity. Rarely in neurasthenia, can any one factor be said to act exclusively, aetiology is often difficult accurately to gauge.

CASE VI. Mrs. W. aged 77. Housewife:-

Has been under my observation since 28th. November 1904, when at 2 o'clock a.m. I received an urgent call to see her on account of bleeding from the nose. She is a little, spare, wizened old lady, who lives a life of continual nervous torment.

The family history is only noteworthy for the presence of "Consumption" in the family of the patient's husband.

A point in this case is that a daughter, in constant attendance, is fast becoming a confirmed neurasthenic, and like her mother is full of "fears". I have not, however, had the opportunity of examining her.

The patient continually complains of her head, the ache being occipital and in the neck. She sighs often, exclaiming, "I am so nervous". "What can be done for my nerves." She is always apprehending the onset of one or other of her previous illnesses. She anxiously enquires, as does at the same instant her daughter, whether there is any possibility of the haemorrhage from the nose returning, whether one thinks the room is at the proper temperature,

and what that temperature ought to be. She is in chronic fear of "cold," and "croup", and "bronchitis," and yet declares she would be right if only she had plenty of air. A change is suggested, but she cannot think of it, "afraid of the journey," "afraid of the lodgings," "afraid for my daughter who is so nervous." She continually complains too of pain in the back, and for 30 years has worn a pessary, scouting all suggestion that she would be better without it. Cataract is present in both eyes, most marked in the left, so that her sight is poor and failing.

In reference to her previous health: at the age of 59 she was laid up for six months, and was unable to walk, the nature of the illness being apparently in doubt, but "she was cured by diet!" At one time she suffered from "ulcer of the stomach," and since has been annoyed by dyspepsia, with flatulence.

Examination in this old lady's case is notable for the extreme arterio-sclerosis, The visible, pulsating radial artery stands out, and feels like a cord, which can be rolled under the finger. The thickening is uniform. The veins are so prominent on the dorsum of the hand as to be a source of dread to the patient. She fears they may burst. There is a somewhat accentuated second sound over

the base of the heart. A trace of albumen is sometimes found in the urine.

I suspect that in this patient the gastro-intestinal tract plays an all-important role, although examination of the viscera apart from those referred to is negative. Certain it is that the patient is only comfortable when the bowels are free, which she manages for herself by means of drop doses of cascara, being of homeopathic persuasion. Some years ago she had an attack of abdominal pain with mucus in the stools. She is the victim of severe flatulence, coming on some hours after food.

As to the illness referred to at the age of 59, it is not easy to tell what its nature may have been. Possibly a case of so-called Astasia-abasia, in which with integrity of sensation and muscular power, the person is unable to walk and to stand.

Arterio-sclerosis so prominent in this patient raises the question of the influence of this condition in neurasthenic patients. If, as one insists, neurasthenia is a disease of the nerve-centres, the state of the arterial wall will enter into our survey and will modify the conduct and prognosis in each individual case. The nutrition of the nervous system will be interfered with.

As to the primary cause in this patient's nervous exhaustion, it should have been noted that her ancestors were farming folk and healthy. After marriage, however, financial anxiety, from which she has never been free, began. In addition a daughter, in infancy, met with an accident, and for twenty-one years required constant nursing.

The neurasthenia, I take to be of old standing, the arterio-sclerosis accentuating a pre-existing condition.

CASE VII Miss R. aged 29, a typist, consulted me on account of "nervousness", "flushings", "palpitation of the heart", and a feeling as "though I should go out of my mind".

To all seeming she is a strong, robust, young woman.

Her mother died from "consumption". Her father suffers from heart disease which apparently is a source of distress to the patient. One sister is considered"nervous".

Examination of the viscera was entirely negative. She, however, declared that the bowels had never acted without medicine.

Constipation is manifestly so frequent in neurasthenia that the part taken by it in the development of the symptoms is of interest. It is probably due to morbid changes in the nervous mechanism for secretion and evacuation of the intestine. "Peristaltic torpor" according to Kussmaul. The findings of Herter and of de Fleury have already been referred to. In this case as in the next the condition of the bowels may have acted per se as a determining cause, given a hereditary or acquired weakness of the central nervous system. Certainly in this instance, what one might describe as cure resulted after two months from attention to the bowels, with the administration of Fowler's solution in

increasing dose. Doubtless in these cases susceptibility is of importance; Herter points to a marked difference in this respect in individual cases.

CASE VIII. Mr. Q. aged 60. Carter.

This man had been received as an hospital in-patient on account of "pain in the back and legs". The house-physician kindly gave me the opportunity of seeing him, and thought he must be a neurasthenic as he could find nothing wrong. Nevertheless one disdovered that this could not be looked upon as a case of pure neurasthenia, inasmuch as the man had a musical murmur replacing the first sound of the heart. Symptoms, however, referable to the circulation, were entirely absent, he was quite ignorant of there being anything amiss there. On enquiry one learns that he has been a life-long sufferer from constipation. "Years ago" indeed, he narrowly escaped "stoppage", his bowels not having acted for a week. He has great flatulence, with difficulty in obtaining relief.

His nervous symptoms are typical of the spinal form of neurasthenia. He complains of vague pains in the back, pointing to the neighbourhood of the sacro-iliac synchondroses. These pains are felt also in the thighs, but cease at the knees. His legs are always cold and numb. His gait is peculiar, he walks with a stiff stoop, and apparently lifts his feet with some difficulty. He is restless, and

when speaking to one, he is never still.

Examination here again reveals a fine tremor of the hands in active movement, and of the eye-lids when tightly closed. There is no hyper-sensitiveness along the spine. The deep reflexes are greatly exaggerated. The superficial reflexes are normal. There is no ankle clonus. A musical murmur replaces the first sound of the heart, heard most distinctly at the apex. Pulsation is not diffuse. There is no thrill. Percussion limits are normal. The pulse is of low tension and irregularly intermittent. There is no cough. Hepatic dullness is normal. There is no arterio-sclerosis. The urine is free from albumen and sugar.

Oppenheim says there may be a cardiac murmur of neurasthenic origin occurring "at the height of an excitement." Here the murmur was manifestly organic in origin.

Constipation over a long series of years probably had an important bearing on this case.

CASE IX. Miss A. aet. 33.

This patient, a surgical nurse, came to me four years ago, on account of a fracture of the metacarpal bone of the left thumb, resulting from a tram accident, and has been under my treatment since.

One step-sister is mentally deranged, otherwise the family history is without importance.

Her life from the age of seven to nineteen was spent in Australia, where she lived out-of-doors, enjoying good health.

Some anxiety, however, was caused at the age of puberty, the catamenia failing to appear until the age of eighteen. Coming to England she entered a Hospital for Women where she had full and sole charge of sixty-four patients. At the end of four years her eyes began to give her trouble. They became red, painful and swollen, and she thought she must lose her sight. On consulting an oculist she was told she was suffering from "Conical Cornea," the "result of strain." For this condition, therefore, she was treated for some months. On improving somewhat she entered a nursing home where she acted as surgical staff nurse. There she took up private nursing,

and while attending to a patient she met with the tram accident to which many of her troubles may be traced. She had reached the second day of menstruation when on leaving a tram in motion she fell prone, coming with violence to the ground. Although she felt she had sustained "internal" injury, she merely complained of the thumb, to which I attended. She proceeded with the patient she was nursing. Some weeks later an examination was made by a gynaecologist and a severe displacement of the uterus was discovered, doubtless resulting from the accident. The uterus was curetted and she remained in bed for some weeks. She, then, came to me again on account of general weakness, "fatigue", acute pains in the back, and "all over," especially severe during menstruation. She complained of violent headache, at times general, and at times at the back of the head. She was troubled by attacks of "giddiness." Depression and"nervousness" with "flushing" were marked. She was constantly sleepless, chiefly, she said, on account of general "neuralgic pains." While treating her for this condition she was forced to go home in order to nurse her mother who was suffering from "Mitual valvular disease", with "Cancer of the Breast". In the midst of this illness her father likewise became ill and died suddenly from "Pneumonia" and "Meningitis." An additional drop in this

bitter cup has been the all but total failure of sight of an only brother. In consequence of these duties I lost sight of her for some time. In November of last year, she consulted me again. On examination per vaginam, I found the uterus retroverted and fixed. She now complained of the "nervousness" in an aggravated form. Her nights were constantly sleepless, general "neuralgic pain", and extreme restlessness demanded an occasional hypodermic injection of morphia. She had lost flesh. Obstinate constipation was present. At times she suffered from incontinence of urine. At my request she was then seen by a second gynaecologist, who in concurrence with a colleague suggested the operation of ventrifixation together with complete rest for twelve months, the one useless without the other. The operation was performed in February of this year.

Examination of the viscera, apart from the uterus, was in this case entirely negative. There was very marked general hyperaesthesia of the abdomen, most evident in the left ovarian region ("Ovarie.") There was exquisite sensitiveness on vaginal examination. It is to be noted that this patient had never suffered from convulsions of an hysterical character.

Myopia is extreme, so that the patient must hold even large type close up to the eyes, which soon tire.

She tells me spectacles have been tried and are said to be useless. The pupils are contracted and equal. There is no contraction of the visual field (tested with the finger).

The aetiology in this case is complex. At first sight the accident would seem to have played the principal rôle in determining the symptoms, and certainly it cannot be ignored. Yet the resulting pelvic condition, I cannot doubt, is to be regarded as the essential factor, leading as it did to constant pain, greatly increased at each succeeding menstrual period. Nor must it be forgotten that the accident with its resulting "shock", and uterine displacement, followed closely upon a life of wearing anxiety as a nurse, who took her duties too seriously, for she is of a highly neurotic disposition. Constipation is certainly of an obstinate character in her case, and must be held to play a part.

This patient, as I write, is "in statu quo", (April) The operation has so far appeared to relieve, but complete cure is far distant and can alone be looked for after prolonged rest, with judicious care.

CASE X. Mrs. S. aet. 32. Housewife.

I first saw this lady in January of the current year. She complained of being weak and tired, with "irritability over trifles," especially the "noises of the children." This latter was a cause of distress to her and she could not understand herself.

In her case I elicited the following history, one not uncommon in neurasthenia. Her father died from phthisis, her mother was addicted to alcohol. Until marriage her health had been perfectly good, but thereafter she had been in constant anxiety on account of "money worries."

Two years ago she passed through a severe instrumental confinement from which she dates all her symptoms. She has suffered since from offensive discharge between the menstrual periods, while the flow itself has been offensive.

The sign which seems to give her most distress and to cause her most surprise is her irritability. All sounds distress her. She cannot "abide to have the children at play near her." Her head aches, and she feels as though it were "opening and closing on the top," which feeling is increased if she bends down. Sometimes she has

a "confused feeling" in the head. She is subject to "turns," in which "all the use goes out of me," and she trembles and is afraid of falling. She is losing her memory, she "forgets little things in the house." Her sleep is interrupted by dreams, in which she sees the children in some terrible accident and she awakes in a fright. She complains that "I cannot get on with my work, I cannot give my mind to it, I am always done up." A "buzzing" noise in the ears is a further source of annoyance. Her eyes are easily tired so that in writing even a post-card the letters "seem to run together." During the last two years she has lost weight. She has at no time suffered from dyspepsia, but is always constipated, the bowels "have never moved without medicine. "

She is a little, thin, highly intelligent woman, quick of movement, and with ruddy cheeks, but anaemic mucous surfaces.

The viscera, other than the uterus, do not call for comment. On vaginal examination in her case I found a cervical endocervicitis, with a lacerated eroded, and greatly thickened, and indurated os. The discharge was abundant, yellow, opaque, thick and offensive.

Treatment was straightway directed to the pelvic

condition, while remedies for the improvement of the blood were begun; these will be referred to later. She received a hot douche night and morning of the Perchloride of Mercury. The cervix was thoroughly swabbed around with a solution of Iodised Phenol. The constipation was attended to. Under this treatment she conspicuously improved. The uterine inflammation yielded well. All discharge ceased between the menstrual periods, while the flow approached normal characters. She is now able, after 4½ months, to get on with her work in the house and feels stronger. The hyperacusis, so distressing to this woman, is a feature in many cases. In a never-to-be-forgotten line Clifford Allbutt says, "The hater of cocks is a neurasthenic." This hyper-sensitiveness to sounds may be due in some to a condition of the cochlear nerve itself, but I imagine it is just as often the result of undue irritability of the higher auditory centres. In this case the drain consequent upon the local uterine discharge acted as the most important determining cause, and the treatment when directed to this together with attention to the anaemia and constipation quickly gave relief.

CASE XI. Mrs. B. aged 29. Housewife:-

Had enjoyed good health until September last, when she had a mild attack of influenza, which kept her in bed for a week, and under medical supervision for a month. She has not been well since.

The family history is without importance. At first her complaint was of acute pain in the right side of the head, face and back of the neck. The nose seemed to "open up" on that side. This pain, however, gave place to the following sensations. The blood seems to "rush all over the body" and finally to reach her head in which she feels a "full", "bursting" sensation. The eyes feel as if "twitching", and as if "they might shoot out." She has attacks of giddiness in which her head seems to "dance round and up and down." Objects seen do not move. This giddiness persists on lying down, and often comes on when her eyes are closed, as in washing or using the towel, also if she turns the eyes upwards, or turns round suddenly. When in the open air she has to make for some object for support. She does not fall to one or other side, but forward. She has never vomited, has never lost consciousness, has never suffered from deafness nor from sounds in the ears. At times she "trembles all over." In "trying

to pick up one article she knocks over another." She is easily tired. Light is painful to her eyes and she wears protecting spectacles.

Is the disease functional or is it organic?

A systematic examination of the nervous system yields but little to help. The motor and sensory functions present nothing calling for comment. There is no paresis. There is no tenderness of the scalp in any part. The muscular sense appears normal, as does also the so-called stereognostic sense. Her writing is excellent. There is no tremor on purposive movement. Romberg's sign is present but not marked. In walking with eyes closed she is unsteady, and loses her balance if asked suddenly to turn about. The patellar reflexes are alike, and are not exaggerated. The plantar reflex is present. There is no ankle clonus. Babiński's test gives a flexor response.

Hearing, tested with the watch, is unimpaired, examination of the auditory meatus and tympanum is negative. Taste and smell are normal. The pupils are equal, moderately dilated, responding well in accommodation, somewhat sluggish to light. There is no contraction of the visual field, no hemianopsia, nor nystagmus. Colour sense is normal. There is no abnormality on ophthalmoscopic examination.

Enquiry in reference to the other systems is negative.

Are the symptoms due to cerebellar tumour? Localising signs as yet are absent, and this during a period presumably of 8 months. There is no optic neuritis, which Osler says is apt to appear early in these cases. He quotes Krauss as finding that in 100 cases of disease of the cerebellum,, 66 presented optic neuritis, while 23 were unreported. This patient has never had vomiting. There is no ataxia, which, however, may be found with or without vertigo. This latter symptom, so persistent in this case, must, however, guard the diagnosis. Vertigo is common in many diseases and may be of serious or little significance. Here it is uniformly subjective. Ménière's disease may be excluded on account of absence of tinnitus. There is pain and stiffness in the muscles of the neck and occiput. The fatigue is frequent in both affections. The photophobia rather points to a functional origin, but little can be made of this.

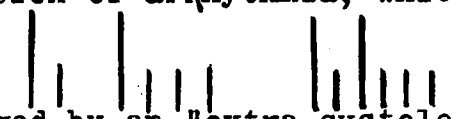
The patient was seen by a neurologist who could not commit himself to a definite opinion, but was inclined to look upon the disease as organic.

It is an example of the care with which one must consider all "functional" diseases, before coming to a diagnosis. Often time alone will show.

CASE XII. Mr. C. aged 39. Painter:-

Came to me complaining of "nervousness" and "weakness", of six months' duration but recently getting worse. The beginning of his troubles he traces to the time when he received greater responsibility in work, being made a foreman.

This man's wife informed me he was always a little "soft", "easily tired", "wanting in energy." "When he is about to do anything, he thinks it is a mountain and that he will never get through with it." If he is asked at work to add up a line of figures he is surprised to find he hesitates and cannot do it. He is haunted by a fear of infectious disease in himself or in his family. Occasionally he complains of pain on the top of the head. He is particularly careful to wash his hands, and his wife says he invariably"throws away the piece of bread with which his fingers have been in contact." The bowels move regularly. The classical signs of poisoning by lead are conspicuous by their absence. There is no anaemia nor blue lime on the gum, there is no palsy, and no convulsions, he has never had "colic". There is no arterio-sclerosis. The urine is free from albumen and sugar.

In the heart at one of my examinations I found a condition of arrhythmia, which may be graphically described thus  two normal beats being followed by an "extra systole", and lengthened pause (allorhythmia.) The pulse was regular. There was no complaint of breathlessness nor of palpitation. I made a careful examination of the eyes and their fundi and found them normal. The nervous symptoms here may have been in part due to chronic lead poisoning of the nerve centres acting in this case in the presence of a neuropathic tendency. It is to be noted that the nervous trouble appeared to be immediately determined by his increased work & responsibility - a common experience. Up to a point apparently the nervous system worked well enough, but was unable for any unwonted strain. Oppenheim in his book on the Nervous System (page 344) says: "Epilepsy and the various psychoses - particularly a curable form similar to paralytic dementia, and probably also a true form of this mental disease - must in some cases be ragarded as a product of chronic lead poisoning. Lead may also act directly upon the brain ..... and produce those peculiar neuroses allied to hysteria."

The treatment, in the first place directed to the bowels and followed by a tonic, resulted in so much improve-

ment that after six weeks he professed himself better and was bright and cheerful.

CASE XIII. Mr. P. aged 16.

The age of puberty in boys requires care and wise management, especially if as in this case the youth has "outgrown his strength," and is of nervous ancestry. The boy's father, a patient of mine, was of a highly neurotic temperament. He died at the age of 37 from Bright's disease.

This boy came to me in September 1905, complaining of irritability in the presence of noises of all kinds. He said he could not remain at his work as a warehouse clerk on account of the "thumping of the machinery." Noises and vehicles on the street frighten him, and if on a car and another passes he is in fear until it is gone. His mother tells me he is depressed at home, irritable and "easily knocked up."

I examined his mouth and teeth and discovered a series of septic shells and stumps, and promptly advised him to see a dentist. This he did. He remained, however, under my own care for 4 months, during which I prescribed a mixture containing iron, arsenic and strychnine. The results were manifest and he quickly began to mend, and his nervous fears and depression passed.

CASE XIV. Mrs. C. aged 44:-

Was first seen in April 1904, complaining of a "lump" in the "stomach."

She is one of a family of eight, all strong and well. November 1902 marked the beginning of her troubles, for then her husband "took to bed" with "sciatica." For 12 months she nursed him day and night, rubbing the painful limb. Meanwhile the burden of house and finance rested solely upon her. One day, in the midst of rubbing, she felt sick and faint and experienced a "dragging" in the right side. She then discovered the "lump" referred to, but said nothing about it. Meantime she became "nervous", "easily upset", readily startled and sleepless. She lost weight rapidly, about 3 st. in 12 months. She is a pale, thin, harassed woman, voluble in the recital of her miseries. Examination is easily made on account of the flat, scaphoid abdomen. The "lump" is the right kidney, which can be moved into almost any part of the abdominal cavity. Yet the symptoms referred to the abdomen have never been severe, being confined to an uneasy "dragging." There has been no pain or difficulty in micturition, and no vomiting.

Nephrorrhaphy, however, was performed in May 1904. As regards the general health she is certainly improved (February 1907) but the "dragging" continues, and she is quite unable to stoop or to kneel because of this. In striking contrast to the previous condition there are now great masses of adipose tissue in the abdominal wall and lower chest. She has gained 4 st. since the operation. Yet she remains anaemic, the face is little changed. Operation in such cases will doubtless come to be entirely superceded by a well-fitting pad, and treatment directed to the associated neurosis, rest with feeding being essential. Certainly in this instance the results of operation do not appear to have been altogether satisfactory. She resembles now those "fat anaemic" women to whom Weir-Mitchell refers in his book, "Fat and Blood." The truth is that in such cases the neurosis must be carefully considered and kept well to the front in all our therapeutics. In another case of the kind which I had an opportunity of seeing, I was struck with the extremely neurotic character of the patient, the renal condition being relatively mild. The next case further illustrates this point.

CASE XV. Mrs. McL. aet 60.

As will be incidentally seen in this patient one may have a marked prolapse of one or more of the abdominal viscera, without any symptoms whatever.

Morbid fear in neurasthenia is one of the stigmata of the disease. These "phobias" are real to the patient, lightly as one may be disposed to treat them. Beard says they are usually found in cerebral neurasthenia, and have vertigo as a concomitant symptom. Pathophobia, fear of disease, is well illustrated in the present case, and is perhaps one of the most frequent. Claustrophobia, a fear of closed spaces, and Agoraphobia, a fear of large open spaces, Anthrophobia, fear of society, and Monophobia, fear of being alone, are all described with many others. Insanity in relation to these has already been referred to. The characteristic type of headache is well illustrated in this case. "I feel as if the top of my head is in a vice," (casque neurasthénique of Charcot), or "as if the top of my head were being crushed down on my teeth." Sometimes the ache is general, not seldom it is occipital. Deficiency of memory is common in neurasthenia and was a feature here. She forgot the names of streets and could not find her way

home.

Mrs.M'L. came anxious to know whether she had "Sugar Diabetes"? Sickness and "money worries" after marriage had played an important rôle, her ancestors being farmers and strong. One child died from "Consumption of the Bowels."

Her obsession, for such it is, began nine years ago, when a son, aged 27, died from Diabetes. That she herself is so afflicted has been her dread since.

At the climacteric she suffered from "nervous debility", but was somewhat restored to health.

She is a little, thin, restless creature, full of miseries, in the recital of which in a whining voice she will suddenly stop, exclaiming, "Dear me, I've forgotten what I was going to say, now that's just how I am." She has a long list of "feelings", "coldness of hands, feet and back," "prickings," numbness and "pains all over," feels as if "an insect were biting me." In bed she feels as if she were falling.

The urine has been repeatedly tested with negative result, the diet being a mixed one. The amount passed in 24 hours averages 2000 c.c., it is of low specific gravity, 1007 - 1010. There is no albumen. Micturition is frequent. (pollakuria.) There is marked prolapse of the small intestine, so that in the erect posture a tumour appears

which reaches the umbilicus, and which in recumbency is non-existent. The patient was entirely unaware of the condition. Treatment it is to be feared must be confined to persuasion and periodic argument and re-assurance. At her time of life and in view of the fixed character of the obsession the outlook is not hopeful; melancholia, indeed, is to be feared.

CASE XVI. Mrs. W. aged 49;-

Is a member of a neurotic race, being a Russian Jewess, and her history is throughout significant of the profound effect of the mind on the body.

Eighteen years ago, in Russia, a "turf" which she was lifting fell upon her head, marking for her the beginning of a life of bondage.

She gives the usual category of symptoms in a wild, incoherent language, with closed eyes and rhythmically swaying body. Her head feels as if it were "bursting" or "opening up." She has been in England for 11 years. Twelve months ago, on the birth of a child, all her misery was re-doubled. Upon getting out of bed, being afflicted with toothache, she sent for some paste and applied it to the offending tooth. Immediately she imagined she had been poisoned. Since then her diet has consisted of water, an occasional biscuit, and a little weak tea. Stronger food gave her pain in the stomach, and made her feel "funny all over." When I saw her four months ago she was little better than a living skeleton. The air at the front door caused her to faint. All smells had a like effect. How this woman kept alive is a mystery! "Anorexia nervosa"

was here present in its typical form. In the first instance the refusal of food arose apparently from psychic causes, resulting from the above poison scare. Then followed an entire absence of appetite, so that she could not look at food, and became extremely emaciated. Flatulence was present and marked, but there had never been vomiting. There was no apparent dilatation of the stomach. Anorexia nervosa was described by Sir William Gull in Hysterical women. In the case of this Jewess the gastric disorder was super-imposed upon an existing neurasthenia, a vicious circle being the result. From the patient's own view-point, trauma, in the shape of the head injury, would seem to have determined the onset of the neurasthenia. After much persuasion, this woman was induced to live upon milk, with the best results; she quickly began to put on flesh, and although still full of complaints she is in every way better.

CASE XVII. Mr. A. aged 43. Merchant.

This patient and the one following are classified as Traumatic Neurasthenia. In both the symptoms were for the most part subjective. They contrast, in that in this instance the symptoms did not appear until ten days after the "shock," while in the next they appeared immediately. In both the cause was a powerful psychic impression suddenly developed, in effect a "fright neurosis", associated with "commotion" in the central nervous system. In neither instance was there any objective physical injury. The symptoms in the present case were those of "acute neurasthenia", in the other the primary picture was that of hysteria, although ultimately the neurasthenic symptoms alone remained. So far as one could judge both cases occurred in men otherwise healthy, although in Case XVIII the patient was of more or less neurotic disposition. In neither case could any marked neurosis be traced in the family history.

Early in December 1906 Mr. A. and his wife awoke soon after going to bed to find an odour of gas in the bedroom. Getting out of bed Mr. A. looked around for the origin. Not finding this in the house he proceeded to the

metre, situated in the vestibule of the front entrance. Here he struck a light, when there was a violent explosion, which lifted the roof from an adjoining room. Next day he went to business as usual and so for 10 days. Then he consulted me, saying, "Doctor, I feel funny!" The first point to strike one was the remarkable respiration, which was short, shallow, quiet and increased in rate; this feature speedily passed. Examining the heart there and then, I found it normal, with no increase in rate. I sent him to bed. The symptoms throughout had reference to the gastro-intestinal tract. He complained of a vague feeling of uneasiness in the abdomen, of pain in the left iliac region, and left inferior costal margin. His food was vomited, and his bowels were loose. He got depressed, complained of loss of memory, and of headaches. His sleep at first was in irregular snatches, finally he could not sleep at all. On several occasions I was asked to see him late at night, and found he could give no coherent reason for wanting me except that "I feel queer somehow." He began to question whether he would not lose his senses. This patient, thinking he was progressing, got out of bed unknown to me. All his troubles returned. The first evidence of improvement showed itself when I insisted upon absolute rest in bed. I then used electricity in the form of the Faradic current to the abdomen with favourable

results. Remedies directed to quieting of the stomach and bowels resulted at the end of 4 months in return of normal health.

CASE XVIII. Mr. S. aged 52.

In April of last year this patient in boarding an electric tram received a "shock," when grasping the brass upright bar. He "momentarily lost consciousness", but did not fall. Feeling "queer all over" he came to consult me; I saw him later the same evening.

I found a tall, well-built man, in acute distress and weeping like any child. In a high-pitched monotonous voice (like that of recovery from acute illness) he described the accident and the resulting strange sensations. For some days the symptoms resembled hysteria. He wept at each visit, declaring he could never be well again. This however passed, giving place to a condition of fixed depression and irritation, with melancholy and brooding silence. His entire complaint took origin from the mind. Being a School Inspector he had been engaged daily in mental pursuits. Now he was distressed to find that he could not think, that he was unable to concentrate his thoughts, that he was unable to read.

When one examined in the usual way for evidence of objective nervous defect, he at first replied, and then treated the questions as to sensation etc. with contempt,

saying, "Does he imagine I am a child." In fact the symptoms were almost wholly subjective. Muscular fatigue was a constant source of trouble. The grip was somewhat feeble. As an amusement he had been wont to break up wood for fire-lighting, and was now alarmed to find he could not use the axe properly, and became tired at once. His legs too were "heavy", his gait slow and listless. There was no tremor. Subjective sensory signs were much in evidence. These were most severe on the side which received the electric shock, namely, the left. He complained of "coldness," "numbness,", "tingling," "strange feelings," the localisation of which he carefully indicated by drawing his finger in a straight line along the left side of the trunk, the inner surface of the arm, and the outer side of the thigh and leg. He complained of "tightness" round the chest. Never on any occasion did he complain of pain. The deep reflexes were exaggerated. There was no clonus. There was no contraction of the visual field, nor other disturbance of vision, subjective or objective. The other special senses were found normal. He complained of palipitation with peculiar feelings over the heart, but no change was detected on physical examination. The urine was found normal.

Litigation in this instance had to be considered

but the conclusion of the proceedings and the award of compensation had little to do either with the persistence or relief of the symptoms. After twelve months he is better, but one can well see he is not right. He complains still of fatigue and depression and lack of interest in life.

*The distribution of the "sensations" of which he complained was that usual in such cases, viz. the ulnar surface of the upper limb, and in the lower the antero-external surface of the thigh (external cutaneous nerve). The objective symptoms of neurasthenia were all but absent.

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* Treves: Traumatic neurasthenia. Allbutt's Sys. of Med.

CASE XIX. B. W. aged 30:-

A son of the patient described in Case I, affords an example of cerebral neurasthenia. With the history of his father before us, we have manifestly a marked neuropathic predisposition.

Additional strain from late office work, resulted in an attack of neurasthenia, characterised by depression, headache, "a feeling as if my head were running away from my body," and an anxious foreboding that he would become insane. His work at the office worries him, he cannot get through it, and instead of tackling it he gets irritated over it. Then he thinks of it when he leaves it, and when he goes to bed he is unable to sleep, as the figures recur to his memory, and he is afraid, of having made mistakes. In speaking to this patient I noted a marked want of cerebration. When one spoke to him he stared in a confused, anxious fashion, apparently only partially recognising what was said. He seemed to have lost in a measure the power of consecutive thought. As is so often the case in these men, there was an enfeebled will, he had lost confidence in his own endeavour, and consequently brooded in misery over his condition. There was no

complaint whatever of gastric disorder, and all the organs were apparently healthy. He could not, however, be looked upon as a robust man; commonly found in cerebral neurasthenia. He was "slack", intellectually and physically.

I, therefore, in the first place directed my attention to persuasion, argument and encouragement. I advised him to take more exercise, to interest himself in some out-door pursuit. I induced him to take a morning bath, with a tepid or cold sponge down. From the latter he reports great improvement. He has taken to golf, and in many ways he is improved in mind as well as in body.

CASE XX. MISS D. O. aged 9.

This little girl's mother brought her to me in the beginning of the present year, as she was "nervous", sleepless, and had lost all appetite for food.

Her mother has always been "nervous" but in neither child nor parent is there any history of "fits."

Her mother's people were French, her maternal grandfather being "very nervous" and suffering from "Asthma", as did also his wife. Both paternal grandparents were alcoholics "all their days". The child has always been excitable and neurotic. On going to school at the age of seven, the teacher sent her home declaring "she is too nervous to learn." Five years ago she had an attack of "rheumatism."

She has never been able to play with other children on account of the excitable condition to which it leads. She has, therefore, been condemned almost exclusively to the society of her mother. In the night she does not sleep until an hour or two have passed, and then only to wake up in a fright, and sit up in bed screaming. She is soon tired at play and wants to rest. The bowels are obstinately constipated, the appetite indifferent. She is

an exceedingly bright, well-nourished, highly intelligent child. Almost while a question is being put she delivers her answer in quick, well-chosen words. She appears, at the first consultation, in two minds whether to laugh or cry. The conjunctivae, palpebral and bulbar, are red and swollen, the eyes watering readily, especially in wind. Her mother says the eyes soon tire in reading. The eyes were examined for me by an oculist of this city who found the fundi oculorum normal, and who gave it as his opinion that the condition was primarily nervous. There was no error in refraction.

On examining the abdomen which her mother described as swollen at times, I discovered in the hypogastrium a uniformly rounded, painless, movable, intra-abdominal swelling. Doubtful if I could be right, I examined with great care. Her mother says "she appears to be swollen" from time to time in that part. Allbutt describes tumour masses in the abdomen in neurasthenics, due doubtless to spasm of the colon. He has found them in the hepatic, splenic, and sigmoid regions; and he refers to the elusive character of the swelling.

The position of the swelling in my case points to a spasm of the small intestine. Next day when I examined again, the tumour had vanished. The bladder could be

excluded.

The treatment of this patient has given eminently satisfactory results. The child, in the first instance, took an exclusively milk diet, the amount being gradually increased until she was having 2 quarts in 24 hours. Fruit was then added and finally a less limited regime. As an hypnotic I have occasionally given Potass. brom. (grs.V) at night. Iron has been given in the form of liqu.ferri dial. in increasing dose. The bowels have responded well to extr. casc. sagr. liqu. in small tonic doses, (m X) t.i.d.

Her mother tells me, after three months' treatment, that she sleeps well and quietly, that she is less excitable, and less easily fatigued.

Hysteria and neurasthenia may occur in children. The case here cited illustrates well the influence of heredity and environment. The French strain with its neurotic element, on one side, with alcoholism on the other, together with an exquisitely nervous mother, from whom the child is never separated, render the outlook far from hopeful. Whether hysteria may supervene and ultimately dominate the clinical picture of the neurosis will depend upon whether the importance is appreciated of "The Hygiene of the Mind."

—— SUMMARY OF CASES. ——

In summarising these cases of neurasthenia, some further points fall to be noted.

AETIOLOGY: In reference to sex incidence, it is usually stated that males are more frequently affected than females. In my group 13 were in women, and 7 in men.

Mid-life, the time of stress and strain, is the time for neurasthenia; my patients ranged in 14 of the cases from 25 to 55, the youngest was 9, the oldest 77.

Heredity is, by many held to be the most important predisposing cause, an opinion with which I am in entire agreement. It was elicited in half of my cases. Its character took the form of "nervousness" in one or both parents. In one case only was there a history of insanity.

In four cases there was evidence of alcoholism in the parents.

The fact of tuberculosis in the family of neurasthenics is referred to by most writers; it was present in six of my cases.

With reference to exciting causes it will be noted how constantly anxiety and worry appear as outstanding aetiological factors in neurasthenia. In women, to whose

lot falls the nursing of sick relatives, with its inevitable wearing strain, accompanied as it too often is by insufficient sleep, irregular and faulty meals, with no exercise in the open air, it is not surprising that chronic intractable neurasthenia often results. In men in this connection we have to consider the hurry and the financial worry and excitement of modern life, with their exacting demands upon nervous energy. The advent of the motor car is not likely to result in a diminution of nervousness. Disorder in the gastro-intestinal tract, with consequent toxaemia, had to be considered in 10 of my cases. One of these complained of gastric symptoms alone, four of constipation alone, and five of gastric symptoms with constipation. In two cases, Nos. VII and VIII, as has been noted, the constipation appeared to take a leading part in the aetiology of the neurasthenia, in the others, however, the gastro-intestinal disorder was associated with other factors. In two cases I found oral sepsis, as the origin of the toxaemia, while in one the poison of influenza probably determined the condition. In one the poison of lead seemed to be an exciting cause of the neurasthenia. Uterine disturbance was present as an important cause in two patients, in one associated with retroversion and constant pain, in the other with persistent purulent discharge.

In the case of the lady afflicted with migraine, the wearing pain of this disease, doubtless played an important role in the development of the neurasthenia.

One case was associated with movable kidney. Three cases resulted from "shock" consequent upon trauma.

The aetiology, it will be seen, from my histories, is difficult exactly to state, owing to the various factors which fall to be considered, and the relative importance to be attached to each one.

THE PROGNOSIS IN NEURASTHENIA.

The important questions of prognosis and treatment of neurasthenia in general practice are essentially bound up with the circumstances of the individual patient. One is harassed with an abiding sense of limitation. So much of the treatment which would mean for these sufferers the restoration to health and strength must be set aside, on account of expense. The Weir-Mitchell regime cannot even be discussed; electricity and massage, with the inevitable nurse, mean money. For a like reason even change of scene and air cannot be had in many cases. One must therefore make the best use one can of the means lying to hand, and be thankful for small mercies. Much can be done. Weir-Mitchell has taught the profession the necessity of rest, and this one can always, at least in a measure, insist upon. The prognosis, then, cannot be as favourable as it must be amongst patients of unlimited means.

It will, moreover, be seen that in not a few of the cases cited by me, a cure is not to be expected. The patients are able for a certain amount of duty, they are not bed-ridden, albeit their nervous trouble acts as a

continual drag upon their activity, and while it does not entirely disable, much less kill, it hinders. Amongst such are to be found the aged and those who have inherited an unstable nervous system, or in whom from a life of worry and strain, the central nervous system has collapsed. The condition must be considered inherent, ineradicable. Nevertheless, that I can write cure against six, and improvement against seven, of my patients, shows that the outlook is in many cases hopeful. Neurasthenia, however, is a chronic affection, and when one imagines the cure is well established, any undue exciting strain may again light up the condition. If one has to do with a manifest source of irritation, blood infection, or drain, then, by attacking these, improvement, if not cure, often results.

THE TREATMENT OF NEURASTHENIA.

The question of prophylaxis has already been referred to in an earlier part of this thesis. Its importance cannot be over-estimated. If the advice of medical men were more invited in the prevention of the ills that flesh is heir to, especially in the neuroses, an infinity of suffering would be avoided. In no department is this more required than in what may be termed the every-day routine of life. Often one finds this is entirely wrong for the individual concerned. His diet is faulty, he takes no exercise, he over-sleeps himself, he avoids cold water like the plague, and he escapes for a time, and imagines all is well, but he is utterly unfit to meet any additional burden, he is destitute of reserve. I have, in this connection, very powerfully before my mind Case XIX of my series, a young man aged 30.

Referring to my habitual plan of treatment in neurasthenia, these patients I find consult the man who will take an interest in their sensations and pains, and who will examine them with care, and not pooh-pooh the trouble, and label it "hysteria." I have referred to one

who comes periodically to be re-assured. He is quite content if only one examines and tells him all is well, arguing with and persuading him, in other words the treatment is largely psychic. Drugs are not to be ignored, precisely on this account, for the power of a dose of physic on the mind in some patients is manifest.

And first as to the bowels, for these require management, constipation being the rule. I have again and again cured constipation in neurasthenia and otherwise by a simple draught of cold, or hot water, in the morning, fasting, with strict timely attention to the call of nature. In one of my female patients, after years of constipation, with continual drugging, she was surprised to find this simple plan quickly effective. In these cases, too, an occasional rectal injection of soap and water is a valuable aid. Of drugs in constipation, I have used the following, in order of efficiency:- Ext. casc. sagr. liqu. aromat. in tonic dose (m $\overline{\text{X}}$ - $\overline{\text{XX}}$) t.i.d., with or without tinct. nuc. vom. (m $\overline{\text{V}}$), and tinct. belladonna (m $\overline{\text{V}}$). In many this plan leads to a comfortable, single, morning motion, calomel (gr. iii) at night, followed by "salts" in the morning in a very old and very reliable method of procedure. "Purgen" (phenol-pthaline) I have used repeatedly, and often with admirable result. Of salines I have found

sod. sulph. efferv. to act well, given as a draught in the morning, and "mist. alb." (mag. sulph. and mag. carb. lev.) is always effective. Weir-Mitchell gives a pill t.i.d. of the watery extract of aloes (gr. ½) with dried ox gall (gr. IV); this I have tried, but with uncertain results.

In cases with gastric disorder, acid. hyd. dil. (m X to XV) with tinct. nuc. vom. (m V to VIII) is useful in my experience.

As tonics, syrup of the hypophosphites, iron in the form of Blaud's pill in increasing dose, liqu. ferri. dial. or ferri. carb. sacch., and Fowler's solution, have one and all helped in the treatment of neurasthenia. Of electricity and massage one can hardly speak, for in general practice it is clear that these valuable agents are rarely available.

Hydrotherapy, I believe, to be one of the most useful forms of treatment. In Case XIX of my series I induced the young man to begin a morning bath, with a tepid or cold sponge down, and the result he testified was immediately beneficial. Unfortunately many cannot make use of this means on account of feebleness or lack of reaction, so that they complain of being chilly throughout the day.

The diet is important. The excess in my experience is more often in the direction of carbohydrate than proteid.

One constantly hears these patients say, "I am no meat eater," and one finds on enquiry that the starch and sugar elements bulk largely in their diet list. To correct this is of the first importance, and the prescription of a mixed diet, i.e., one in which in the cases considered the proteid is increased, often gives marked relief. Fruit has been referred to in one of my patients (Case XX) and its use with the coarser breads and porridge, are eminently advisable in all cases, but especially if constipation is present.

CONCLUSIONS.

1. Neurasthenia in its essence is a disease of the nervous system.
2. The nervous defect may be hereditary, congenital or acquired.
3. In the present state of our knowledge, neurasthenia is classified amongst the "functional" neuroses, its morbid anatomy is as yet unknown.
4. Mentally, it follows, the neurasthenic is abnormal. The key to his condition lies here.
5. A determining cause of neurasthenia may be found in disorder of any organ of the body.
6. The symptoms referable to such a disorder may mask the neurasthenia or be masked by it.
7. Treatment directed to such an organ may, but does not necessarily cure, the neurasthenia.

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