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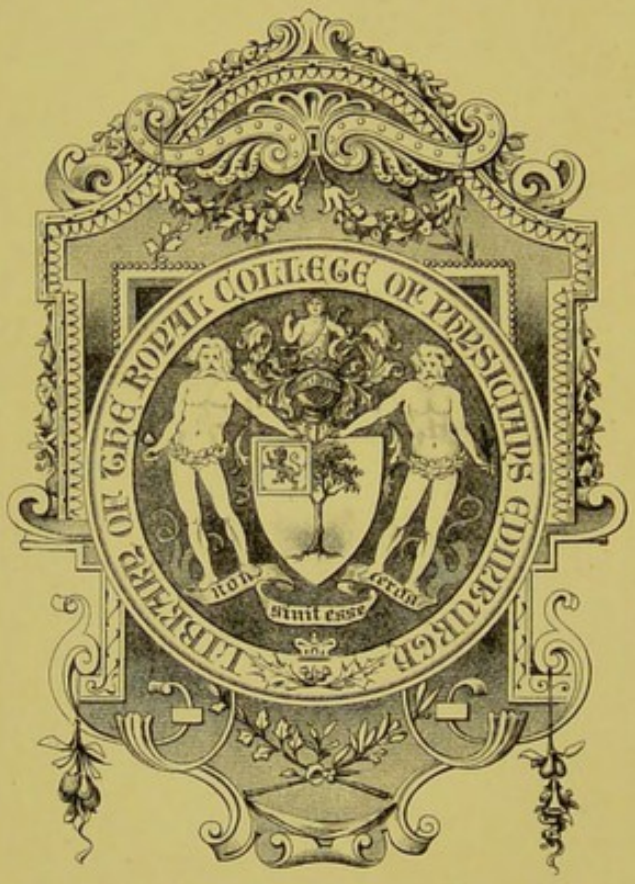
NEURASTHENIA

GILBERT BALLET



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NEURASTHENIA.

NEURASTHENIA

BY

GILBERT BALLET

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MÉDECIN DE L'HOTEL DIEU
PRÉSIDENT DE LA SOCIETÉ DE NEUROLOGIE

TRANSLATED FROM
THE THIRD FRENCH EDITION
BY

P. CAMPBELL SMITH, M.D.

Third Edition

ILLUSTRATED WITH SEVEN FIGURES

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AUTHOR'S PREFACE TO THE THIRD FRENCH EDITION.

The first and second editions of this work bore the name of our dear and lamented teacher, Professor Proust, as well as our own. In preparing this third edition we have been deprived of his valuable collaboration, which we are desirous of commemorating.

The hygiene of the Neurasthenic is the same to-day as yesterday, and we have had no fundamental modifications to make in our original work. We have thought it necessary however to render it more complete on certain points. In this edition will be found some new sections which were not in those that preceded it. The word Neurasthenia is one of those that are so much abused, by being employed wrongly and without discernment, that we have deemed it useful to render its clinical signification more precise, and to devote several pages to the diagnosis of the affections to which it is unfittingly applied. We have made some necessary additions to the chapters on psychotherapeutics and on the dietetic régime of Neurasthenics. We have thought that

it is not superfluous to mention certain new developments in the hygiene and treatment of the intestinal disorders that are so frequent in nervous asthenia. Treatment and hygiene are so closely related that it is very difficult to separate them, and it would be arbitrary to try to do so. Such as it is, to-day as yesterday, this little book does not claim to be a dogmatic treatise on Neurasthenia, but an abstract in which we have tried to set forth briefly and as clearly as possible the rules and facts which should guide the clinician in practice.[1]

[1] The penultimate sentence of the above refers to the fact that the title of the original is "L'Hygiène du Neurasthénique," the book forming one of a series of works on hygiene. But, as the author points out, he does not confine himself to hygiene, and it is thought that the English title expresses better the scope of the work.—*Trans.*

AUTHORS' PREFACE TO FIRST EDITION.

It is not our intention to set forth in this work a full account, with illustrative cases, of Neurasthenia and its treatment. This affection has been the subject of many descriptions since the truly fundamental picture of it drawn by Beard. The American author was not indeed the first to observe and to isolate Neurasthenia, since its principal symptoms are found in the *Spinal Irritation* of Franck, the *Proteiform Neuralgia* of Cerise, the *Nervosity* of Bouchut, and the *Cerebro-cardiac Neuropathy* of Krishaber; but Beard's monograph had the merit of being more synthetic and more complete than its predecessors, and above all it had the good fortune to appear at a propitious moment. While *Nervous Exhaustion* seemed to become multiplied in America and naturally drew the attention of neuro-pathologists (Weir Mitchell after Beard), in the old world the new conditions created by the exigencies of modern life promoted the recrudescence of the *Neurosis from Exhaustion* of which Monneret had already spoken.

It is an often-repeated commonplace to-day, that in consequence of the progress of civilisation and the increase in cerebral activity entailed thereby, neuroses in all their forms have become much more common than formerly. This statement deserves the trouble of verification, and it must be confessed that precise observations for making this verification with some degree of exactitude are still wanting. Besides, even if the pessimists were right, it would not thereby be proved that the entire increase in the number of nervous complaints must be ascribed to the refinements of civilisation and the new requirements that our brains have to satisfy. Intoxications, including the least refined of them, alcoholic poisoning, might rightly claim a large share in the determining causes of the nervous disorders that seem to be special to our epoch.

However this be, notwithstanding the reserve with which scientific prudence enjoins us to receive unproved assertions, we cannot help thinking that, in some circles at least, Neurasthenia is commoner than it was sixty years ago. In any case we recognise it better, and we give it a name when we meet it; facts that may suffice in some measure to explain how it seems much more frequent to us than at the time when it was *unnamed*, or, what comes to the same thing, when it had too many names. Whether its frequency has increased at all, or not at all,

moderately or a great deal, this much is certain, that Neurasthenia is a common complaint; and this is enough to explain the favour with which Beard's description was greeted. Charcot in France ensured its recognition and many others followed,[1] so much so that at the present moment Neurasthenia, which was almost unknown thirty years ago, has more than assumed its rightful place in clinical medicine, and has become a convenient name which too often covers erroneous or incomplete diagnoses.

Hence it will not cause surprise that in a work devoted to the laying down of the hygienic measures requisite for the prophylaxis and treatment of Neurasthenia, we have judged it

[1] The following are the principal works or complete descriptions to which Neurasthenia has given origin.

Beard, A *Practical Treatise on Nervous Exhaustion, its Causes, Symptoms and Sequences*, New York, 1880.—Axenfeld et Huchard, *Traité des Névroses;* Paris, 1883.—Charcot, *Leçons cliniques*, and passim.—Ziemssen, *Die Neurasthenie und ihre Behandlung*, Leipzig, 1887 (translated for the New Sydenham Soc., 1894).—Bouveret, *La Neurasthénie*, 2nd ed.; J. B. Baillière, Paris, 1891.—Mathieu, *Neurasthénie*, collection *Charcot-Debove*.—Levillain, *La Neurasthénie*, Paris, 1891.—Dutil, art. *Neurasthénie*, in *Traité de médecine*, Paris, 1894.—F. Müller, *Handbuch der Neurasthenie*, Leipzig, 1893.—Gilles de la Tourette, *Les états neurasthéniques*, J. B. Baillière, Paris, 1900.—Maurice de Fleury, *Les grands symptômes neurasthéniques*, F. Alcan, Paris, 1901.—Brissaud, art. *Neurasthénie*, in Brouardel and Gilbert's *Traité de médecine*, Paris, 1902.—Godlewski, *Les neurasthénics*, Maloine, Paris, 1904.

[The almost classical work by Dr. Weir Mitchell—*Fat and Blood*, 8th ed., 1900—should be mentioned. Other monographs in English are *On Brain and Nerve Exhaustion* by Dr. T. S. Dowse, 4th ed., 1894, and *Clinical Lectures on Neurasthenia* by Dr. T. D. Savill, 3rd ed., 1906. There are also very instructive articles by Prof. Dana in the *Twentieth Century Practice of Medicine*, vol. x, and by Prof. Clifford Allbutt in his *System of Medicine*, vol. viii. The important papers by Playfair in *Brit. Med. Journ*, 1882, and Page in *Med. Times and Gazette*, 1885 (reprinted) must also be referred to.—*Trans.*]

necessary to describe the affection, and to point out the various forms, both the commoner and the rarer, that it is clinically found to assume. Again, prophylaxis presupposes a knowledge of all the possible causes of the affection; hence it has been necessary for us to make a short study—or at least a detailed enumeration—of these causes.

Hygienic measures, which would suffice to prevent Neurasthenia if they were rigorously applied and, we must add, if they were always applicable, usually suffice also to cure it when the complaint is capable of cure. Without wishing to abolish treatment by medicines, we venture to say that on the whole more harm than good has been done by drugs both to those threatened by Neurasthenia and to those already attacked. If we could draw up a schedule of the evil results of so-called tonic and "building-up" medicines, of the different hypnotics, in short of all the pharmaceutical products that overload the more or less well-advised forms of treatment that have entered into daily use, we should ask if neurasthenics were the debtors or the victims of medicine. Was it not Montaigne who said that the physicians of his time, to avoid curing the brain at the expense of the stomach, injured the stomach and made the brain worse, "by their confused multitude of discordant drugs"? Do not let us imitate the bad practitioners of that age, and do not let us forget that a medical man

would be ignorant of his duties if he believed them to be limited to prescribing medicines; good moral and physical hygiene, a well-conceived dietary, the action of suggestion in the shape of advice and encouragement, these as a rule do more for the neurasthenic than complex prescriptions that are often useless and sometimes harmful. This is enough to show the interest presented by the subject on which we are now about to enter.

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TRANSLATOR'S INTRODUCTION.

To those who have read Professor Ballet's work in the original, a translation will need no apology—save for its own defects. Striking features of the book are its eminently practical character and its clearness of exposition; in addition to these qualities the work shows wide experience and great precision of observation on the part of the author, who has succeeded in drawing a vivid picture of the complaint, and in laying down the details of treatment with fulness and lucidity. The third French edition, from which the present English edition has been taken, contains a great deal of new matter; a valuable chapter on differential diagnosis has been added, and the sections on treatment have been rendered even more complete.

Something additional, however, may be said on the question of pathogeny. The name Neurasthenia is commonly applied, even by medical men, to two different, though closely related, conditions: one, the disease of adults which forms the subject of this work; the other a state of languor, usually congenital but sometimes arising in infancy,

which I have elsewhere called Neurasthenia Minor,[1] and which has been described as being "born tired." Inquiry will show that the former is nearly always, in this country at any rate, a mere exacerbation of the latter, its symptoms being partly the same, and those that are new being due to an aggravation of some of the more fundamental pathological conditions of the congenital complaint by worry or some other fatiguing influence. As to the nature of the minor disorder, the more fundamental pathological conditions just referred to—some of which may be very slight—are as follows:

1. Chronic fatigue of perception, memory, action, will, and the nervous system generally. The expression "chronic fatigue" may seem inapplicable to a congenital state, but it has been used in preference to "weakness" because the condition resembles fatigue rather than simple deficiency in strength or acuity: it exhibits not only this deficiency but also irritability; moreover action takes an abnormally long time to reach its maximum, and effort cannot be sustained regularly, but shows marked oscillations. Among the manifestations of the irritable weakness just referred to are mental excitability, and the overflowing of their habitual paths by impulses, so as to give rise to slight incoordination of action, and

1 *Brit. Med. Journ.*, 1903, Vol. I, p. 781. The symptoms from infancy to adolescence are dealt with in this article.

occasionally to disordered movements, especially in children.

2. Vasomotor instability.

3. Defective metabolism. Professor Ballet calls attention (p. 113) to the fact that neurastheniform symptoms occur in auto-intoxications and in various diseases which are all, it may be observed, of a nature to produce metabolic disturbances. Prof. Dieulafoy's "petits accidents du brightisme" (chronic nephritis) are nearly all symptoms of neurasthenia minor. The frequent occurrence in the urine of signs of perverted katabolism (the features mentioned on pp. 88, 89 may be found in the minor complaint as well as in the major) points in the same direction; so also does the combination, insisted on by Prof. Ballet, of neurotic and arthritic manifestations.

4. Abnormalities of internal secretions (probably). These are indicated by the likenesses between neurasthenia and exophthalmic goitre; by the occasional occurrence of errors of development similar to those found in persons whose testes or ovaries have been removed; by the defective metabolism; and perhaps also the frequent tendency to alcoholism points, as suggested by Dr. Harry Campbell, to insufficiency of an internal secretion of a stimulating nature.

5. Often, if not always, some diminution of sexual power.

6. One or more slight bodily malformations.

Now these conditions are characteristic of "degenerates,"[1] so that Neurasthenia Minor is evidently a manifestation of Degeneracy. This opinion is to some extent corroborated by Prof. Ballet's statement (p. 36) that neurasthenia "constitutes one of the gates of entry, perhaps "the principal gate, into the ground of pathologi-"cal heredity." In other words, according to the view here taken, it is a manifestation of the fundamental condition (degeneracy) that lies at the base of most neuropathic states.

Neurasthenia, then, using the term in the sense in which it is employed in the present work (neurasthenia major), may be defined as a group of symptoms due to chronic fatigue with (perhaps one should rather say *including*) defective metabolism and vasomotor irregularity, which may be produced *de novo* by cares, prolonged intoxications, various drains upon the system, certain strong emotions, or some forms of trauma, but which results much oftener from the action of one of these influences on a "degenerate" constitution that has shown some degree of chronic fatigue from infancy.[2]

1 See *Brit. Med. Journ.*, 1906, Vol. I, p. 494, and art. *Degeneracy* in *Edin. Med. Journ.*, 1907, p. 117.

2 Healthy persons do not worry beyond measure, and it seems unlikely that mental stress alone can throw a normal mind off its balance in any direction. In his Morison Lectures for 1907, Dr. Urquhart stated that all his cases of insanity that were ascribed to this cause showed a neuropathic heredity. (See *Journ. Ment. Sci.*, Vol. LIII, pp. 260, 399.)

This last clause is in decided disagreement with the statement on p. 15 that the cases in which heredity acts as a predisposing cause amount to only 40 per cent. of all cases. As against this, Prof. Dana, of New York, holds that there is inherited weakness of nerve structure in the vast majority of the patients.[1] Apart from certain objections to the word "inherited" in this connection, my experience goes to confirm Prof. Dana's opinion. I have very rarely been unable to trace either a neurotic family history, or a personal history of neurasthenia minor, in patients with the major complaint, and anatomical stigmata of degeneracy are very common. Here it may be pointed out that the word "neurotic," when it is not applied to some recognised and well defined neurosis or psychosis, always refers to neurasthenia minor.

In what way do worry, emotion, and intoxications exacerbate the congenital form of neurasthenia, so as to produce the major complaint? Neurasthenic symptoms occur in certain diseases in which there have been found products of imperfect metabolism (such as β-oxybutyric acid in diabetes) which give rise to phenomena of fatigue in a muscle that is irrigated with them.[2] Now the condition of degeneracy is accompanied by faulty metabolism, and this is increased by

[1] *Twentieth Century Practice of Medicine*, Vol. X, p. 753.

[2] See paper read at the meeting of the Brit. Med. Assoc., 1906, by Prof. Lee, New York.

emotion. It is possible, then, that the development of neurasthenia major in a degenerate is, in many instances at least, parallel to the occurrence of neurasthenic symptoms in, say, diabetes, and that both are due to the presence of intoxicating products of abnormal metabolism. Sir Clifford Allbutt, however, in his important article on neurasthenia in his *System of Medicine*, says that he is not convinced that the neurasthenic state is essentially one in which the vital energy is clogged by the accumulation of waste products in the blood or muscles or both; and that the excretory organs commonly signify no such intoxication.[1] It seems probable that what affect the energy are not waste products, but products of improper metabolism. As to the common absence of signs in the excretions, is our knowledge of metabolic products and of the chemistry of the excretion sufficient to justify us in neglecting indirect evidence of the action of toxins due to defective metabolism. What do we know of the internal secretions, and what evidence can we derive from the urine in, *e.g.*, myxœdema? The indirect evidence just referred to appears to be as follows. Disorders of metabolism are often accompanied by neurasthenic symptoms (see pp. xvii and 113), which appear and disappear with them in transitory cases, so that there is evidence of a causal connection, evidence which is

[1] *System of Medicine*, 2nd Ed., Vol. VIII, pp. 783, 784.

confirmed by Prof. Lee's experiments mentioned above. Now emotions may cause disorders of metabolism (*e.g.*, glycosuria), and very commonly exacerbate them. Hence it is not unreasonable to conclude that it is at least probable that when emotions bring about neurasthenia (of which they are the commonest exciting cause), they do so by producing disorders of metabolism of a nature not to be detected by our present methods. This is all the more likely if it be true that those who fall into neurasthenia are already suffering from defective metabolism (see p. xvii.), which has merely to be exacerbated by the emotions.

The connection of neurasthenia with degeneracy explains the occurrence, both in the personal and in the family history of neurasthenics, and in their later life, of other conditions that are also associated with degeneracy. Among these conditions are the various neuroses and psychoses, disorders of nutrition, the arthritic complaints on which Prof. Ballet lays stress, chilblains and "dead" fingers, arterio-sclerosis, Bright's disease, tuberculosis, and heart-disease. The nature of this association belongs to the subject of degeneracy,[1] but reference may be made here to the connection between neurasthenia and insanity. It has been said that when a patient

[1] See *Edin. Med. Journ.*, loc. cit. To put it briefly, the associated conditions are due to imperfect development, to vasomotor irregularities, to faulty metabolism, which both interferes with nutrition and gives rise to toxins, and perhaps to defective internal secretions.

with neurasthenic symptoms shows signs of insanity, the case has been one of insanity from the beginning. The usual state of matters in these cases is that the patient has suffered from neurasthenia minor since his birth. The exciting causes of the insanity have aggravated the neurasthenia, and so has the morbid introspection that forms part of certain kinds of insanity; and further, the loss of self-control has both increased the neurasthenic symptoms, and rendered them more manifest. In other cases, it is true, these symptoms may be due to the disorder of metabolism that forms an integral part of the insanity; but it will be found that a large proportion of neurasthenic insane patients show anatomical and other stigmata of degeneracy, and so have probably been more or less neurasthenic from birth.

The association of neurasthenia and degeneracy may also help to explain certain symptoms which are often considered as belonging to the former condition: exaggerated reflexes, low blood-pressure, shallow respiration, and sometimes attacks of migraine. The first two of these, perhaps all of them, are no doubt increased in many cases of neurasthenia; but all four may be found in simple degeneracy (neurasthenia minor), and in most cases of neurasthenia major it will be found that they were present before the attack began.

Again, the connection between neurasthenia and degeneracy explains the mistaken diagnoses dealt with in Part III, ch. 5. The diseases confounded with neurasthenia major are, like it, founded on a basis of neurasthenia minor, and so display the "neurastheniform" symptoms of which Prof. Ballet speaks.

It also explains the relation, mentioned on p. 124, between the neurosis of anxiety and neurasthenia.

Finally, it affords an explanation of the connection between neurasthenia and enteroptosis, which seems to me more satisfactory than either that of Glénard (p. 283) or that of Bouveret (p. 284), and which, unlike the theories of these observers, serves also to explain why such conditions as mobile heart, uterine displacements (in nulliparæ), spinal curvature, flat-foot, varicocele and perhaps genu valgum, are more common in neurasthenics than in normal subjects. Among the fairly common signs of degeneracy are want of muscular tone and hyperplasia of connective tissue, resulting in laxity of attachments; two conditions which suffice to account for enteroptosis and the other pathological states just mentioned.[1]

In this connection, it is interesting to observe that Prof. Ballet makes a distinction between

[1] See article on *Neurasthenia, Degeneracy, and Mobile Organs*, by the translator, in *Brit. Med. Journ.*, March 3rd, 1906.

Hypochondriasis Major and Hypochondriasis Minor, and associates the latter with neurasthenia. It would seem, in fact, that hypochondriasis, as well as the *maladie du doute*, is essentially a neurasthenic symptom, and that minor degrees of the three conditions are found in nearly all cases of degeneracy, and are all combined together—in varying proportions—in those persons who are liable to develop the major degree of any one of them.

None the less, one must follow Prof. Ballet in insisting most strongly on the fact that the course, prognosis, and treatment of neurasthenia (major) are totally different from those of the other diseases that, like it, flourish on a soil of degeneracy. These diseases must, as he says, be carefully differentiated. It will probably be found that a recognition of the relationship between neurasthenia and degeneracy, so far from causing confusion, will aid considerably in making such differentiation; it will enable the symptoms of neurasthenia minor to be recognised and put aside, so that the diagnosis may be based on the superadded features. A patient who complains of languor, especially on waking in the morning, of speedy exhaustion, of inability to fix the mind, and perhaps of dull pains, will not have his complaint hastily diagnosed as one of neurasthenia (major), if it be recognised that these are symptoms of the minor affection,

perhaps somewhat exacerbated, and are common to a whole group of maladies.

In his remarkable work, "The Dissociation "of a Personality," Dr. Morton Prince holds that neurasthenic symptoms are a manifestation of disintregration of the personality. This, however, appears to refer to neurasthenia accompanied by hysteria. The combination of these two conditions points almost certainly to degeneracy, a view which is supported by the fact that Dr. Prince's patient, when reintegrated and freed from the symptoms of neurasthenia major, seems to have retained those of neurasthenia minor. The case, however, raises other difficulties. It was one of multiple personality, and one of the personalities was markedly neurasthenic, while another appeared very vigorous, even symptoms of neurasthenia minor seeming to be totally absent. This would apparently indicate that neurasthenia minor is purely functional, and has no organic basis such as we hold to exist in degeneracy, and as Prof. Ballet also believes to exist in neurasthenia. Moreover, the change from the feeble to the vigorous personality was accompanied by an *immediate* disappearance of the neurasthenic symptoms—too sudden, one might think, to be compatible with the dependence of those symptoms on a toxic influence. But it is hazardous, in the present state of our knowledge, to draw inferences from cases of this

class. Neurasthenics feel buoyant and energetic occasionally, and it may be that the conditions which brought about such a feeling in the case referred to, caused also the appearance of the vigorous personality; and that with their disappearance the vigorous personality gave place to the feebler. Moreover it is highly probable that the apparent vigour was really due, not to healthy nerve centres, but to that disorder of common sensation which consists in a loss of the sense of fatigue. Dr. Prince's promised second volume will, we hope, throw light on this and many kindred questions.

As regards the treatment of neurasthenia, all must agree with Prof. Ballet's condemnation of the routine use of drugs. Nevertheless, medicinal treatment of symptoms is, as he shows, required at times; for in no complaint does it happen more frequently that the patient gets into a vicious circle, the fundamental disorder producing symptoms which again maintain and aggravate the disease. Among such symptoms, or secondary affections, are constipation, dyspepsia, and auto-intoxications, the treatment of which, by drugs and otherwise, is fully and clearly dealt with in this work; also insomnia, for which, however, the methods of treatment here given are far superior to medicaments; and nerve-storms like migraine and "bilious attacks," which exacerbate neurasthenia almost as much as does

insomnia, and in which calomel acts like a charm, relieving both the asthenia and the nerve-storm. Dr. Guthrie Rankin recommends the treatment of marked vasomotor instability by 5 or 10 grain doses of ichthyol. Far more important than drugs, however, are removal from home (except in mild cases of pure cerebrasthenia), a medical attendant who inspires confidence and courage, and various measures of physical hygiene. Among these last is one on which perhaps too little stress has hitherto been laid: the open-air treatment. The value of this in neurasthenia is often very great, and it should be carried out as thoroughly as in phthisis. This, of course can best be done in special establishments; failing these, windows should be kept open as widely as possible, both day and night, curtains should be abolished, and blinds should be drawn up even at night. Even insomnia is not always a contra-indication to the disuse of blinds.

Of late it has been maintained—by Dr. Dubois in Switzerland,[1] Drs. Déjerine, Camus and Pagniez in France,[1] and Dr. Drummond in this country[2]—that the essential part of the treatment of neurasthenia is mental, consisting of an appeal to the patient's reason. This view seems to be founded on a misconception of the pathogeny of the disease. It is true that such an appeal is

[1] See pp. 178 *seqq.* of this work.

[2] *Brit. Med. Journ.*, 1907, Vol. II, p. 1813.

always valuable—see pp. 181, 196, and 200 to 207 of this work—and in mild cases it may be made from the outset; but, surely, one of the earliest practical lessons that one learns in treating cases of the psychoses of any degree of severity, whether there be intellectual derangement or not, is the futility of appealing to the "higher mental levels" before the general condition has considerably improved. This, indeed, follows from the pathogeny of the complaints. The question is discussed in Part VI, ch. 2, of the present work, which gives an admirable account of the psychical treatment of neurasthenia, in all its branches. One additional point, however, a point of value in many cases, is well brought out by Dr. Drummond: he shows that it is necessary not only to cheer and reassure the patient, but also to stimulate him to depart from his self-involvement, to widen his interests and sympathies, and to strengthen his sense of duty. It must be remembered, however, that this applies to cases with a strong element of hypochondriasis; it would be incorrect and unjust to suppose that every neurasthenic is selfish and self-centred.

The author seems to have been unfortunate in his experience of boarding-schools in his native land. Fortunately for us, things are better in that respect in England, though in many schools the hours of sleep are still too short. The question whether a neurotic boy should go to a boarding-

school or a day-school must be decided by the individual circumstances of the case, including the character of the child's parents.

In translating this work, I have converted metric weights and measures into their English equivalents, either exactly, or omitting fractions, or using the nearest round number, according to the degree of precision required. The use of English weights has necessitated the making of new blocks for Figures 4 to 7, for which I have to thank the Publisher. In other respects I have tried to be as literal as the differences between the two languages will permit, holding accuracy of interpretation to be the most important quality in the translation of a scientific work. I wish that I could have preserved more fully the clearness of expression that is so marked a feature of the original.

NEURASTHENIA.

PART I.

DEFINITION AND NATURE OF NEURASTHENIA.

Neurasthenia is a *neurosis*, that is to say a disease of the nervous system without known organic lesion, which Beard of New York had the merit of disentangling from the chaos of the old vague group of complaints known as "nervous."

It manifests itself by functional derangements which are very many in number, very diversely associated, and for the most part subjective in nature. We possess no certain data as to the modifications of the nerve centres from which these functional derangements spring; we know only their clinical appearance and their causes, and it is solely from an induction founded on the characters of these that we can conjecture the nature of the affection. As it often originates in over-pressure of the higher nerve centres, and as it shows itself chiefly by signs of depression, of weakness of nerve strength, it is supposed that we are here concerned with an intimate derangement of the nutrition of the nerve elements; these elements, it is thought, have increased difficulty in recruiting

their exhausted energy, and no longer accumulate to the same degree as in health the force that they discharge; thus this neurosis is commonly defined as *chronic enfeeblement of nerve strength.* Hence also it is frequently called nervous exhaustion, or nervous weakness. But as symptoms of excitement are frequently seen associated with the signs of depression, neurasthenia is sometimes more accurately and fully designated as *irritable weakness.*

This irritable weakness may manifest its effects not only on the side of the cerebro-spinal system, but also on the side of the nerves of organic life. Neurasthenia not only disturbs the highest and best differentiated functions, those of the brain and the spinal cord, but also affects almost always, though in varying degrees, the innervation of the principal viscera. Three great systems in especial suffer, the circulatory, digestive, and genito-urinary. Hence it is easy to understand how great is the diversity of the functional disorders observed in neurasthenics. As the symptoms may be grouped very differently in different patients, it follows that the complaint presents itself clinically in many and varied forms. And yet, whatever be the multiplicity of the groups of symptoms and of the causes that engender them, there are relations and similarities of character between all these states of nervous debility that establish beyond doubt the independence of the

neurosis. The fundamental symptoms of this affection are several in number: a persistent *headache* of a special character, *insomnia*, *muscular asthenia*, *rachialgia*, a peculiar *mental state*, and lastly *dyspepsia* due to gastro-intestinal atony. These cardinal signs, united in greater or smaller number, characterise the nervous condition described by Beard, a condition which cannot be confounded with any other aggregate of neuropathic symptoms.

The fixity of the symptomatology, or at least of its essential features, establishes a fundamental distinction between neurasthenia, an exhaustion disease, manifesting itself by symptoms of exhaustion, and the neuroses, particularly hysteria, in which the disorders are more especially psychic in nature, and depend on the fixation in the mind of certain images, or, in the current phrase, of suggestions. We shall show that neurasthenia is a somatic disease of the nervous system, and may be contrasted with hysteria, which is a psychical disease, and variable in its manifestations as psychical diseases are. There are, however, many and close relations between mental processes and neurasthenia: on the one hand, mental processes may cause neurasthenia, as when the latter arises from emotions or disappointment; and on the other hand, the state of exhaustion which constitutes the disease brings about conditions that are favourable to the development of a pathological

mental state (melancholy, aboulia, phobias, auto-suggestions), the type of which is the association of hysteria with neurasthenia—hystero-neurasthenia. But even in those cases in which neurasthenia is complicated by secondary and associated disorders, it retains its fundamental and essential character of an exhaustion disease.

This view, according to which the totality of the disorders that make up the affection is due, at any rate on final analysis, to a special state of weakness and irritability of the nerve elements, has not been accepted by all clinical observers; it has been sought to make the different symptoms of the malady depend on certain visceral derangements. Thus some have tried to recognise disorder of the digestive functions as the origin of the neuropathic state, and have thought that dyspepsia, by the perturbation of nutrition that it causes, may be the primary and fundamental cause of the nervous exhaustion. Others have incriminated lesions of the genito-urinary system and genital excesses. Finally, it has been held that the weakness of the nervous centres may be the consequence of a state of poverty of the blood, as if nervous asthenia were necessarily associated with anæmia. We shall have to discuss later these diverse theories which aim at elucidating the still obscure pathogeny of the neurosis; we shall then see how much truth they may contain. But we may say at once that in the majority of cases these patho-

genic theories are contradicted by direct observation of cases. It seems certain that gastro-intestinal atony and genito-urinary derangements are more often the effect than the cause of the affection. As to anæmia, neurasthenia is assuredly independent of it; how many neurasthenics there are with a good complexion, normal blood, and all the external signs of flourishing health! In fact all the functional disturbances observed in these patients appear to depend on the primordial alteration of the nerve elements, of which it is true the intimate nature escapes us. The study of the various causes of the disease, moreover, will enable us to show clearly the preponderating rôle in the pathogeny of neurasthenic states played by the direct and primary affection of the nervous centres. However this be, neurasthenia cannot at the present moment be defined by its pathogenic origin, our conception of which is vague; nor by its lesions, since it presents none appreciable by our means of investigation; nor by its pathological physiology, which is still very obscure. We are necessarily led then to seek in the study of its etiology and clinical characters the rational indication of the hygienic measures to be employed in its prophylaxis and treatment.

PART II.

THE CAUSES OF NEURASTHENIA: WHY AND HOW ONE BECOMES NEURASTHENIC.

CHAPTER I.

GENERAL CAUSES.

Neurasthenia is not, as Beard believed, a modern disease created by the intellectual and moral over-pressure inherent in civilisation and in the social life of our epoch. It is probable that it has existed in all times, like the other neuroses and psychoses to which depressing emotions and moral and physical shocks may give rise in man. It is certain in any case that the physicians of past centuries observed it, notably Galen, Stoll, Sydenham, and Robert Whytt (as is proved by many passages of their writings), although they could not disengage it from the other neuropathic states with which it long remained confounded. But it is none the less true that at the present day neurasthenia is a very common disease, and it even seems, as the majority of modern authors agree in recognising, that it tends to grow more and more frequent. It is not without reason that it has been

called "the disease of the century." And indeed this appellation seems to be justly applicable to it if it be understood thereby not that neurasthenia has appeared in our epoch as a newly-formed morbid species, but that it has taken in our time a development that perhaps it never attained before. This would be, if it were proved, a remarkable fact in the natural history of the neurosis. It is not without interest, for the hygienist at least, to seek for its causes.

If our epoch is, as has been said, particularly fertile in neurasthenics, is it true that, as some have suggested, it owes this unhappy privilege to a sort of all-round degeneration which, following a law of regressive evolution, has invaded the late-come generations, the issue of peoples grown old or of worn-out races? Such an interpretation seems to us disputable, like the pessimistic judgment that certain authors have delivered, rather lightly, on the present generation. To convince oneself of this, it is enough to glance at the ethnographic distribution of neurasthenia. Certainly it is spread over France, Germany, Russia, all the peoples of old Europe; but its frequency is not less in America; it is even especially common there, so much so, that Beard (of New York), when he described it, thought he had discovered a morbid species peculiar to the country where he observed it, in one word, according to his own expression, "an American disease." If neurasthenia has taken

a considerable extension in the United States, a young country of recent civilisation and peopled by a strong race, there is no ground for asserting that the development of this neurosis is to be imputed especially to a sort of senility or regressive evolution on the part of the nations it attacks. Besides, are we justified in holding that the peoples of Europe among which this affection is commonly observed, are on the road to physical and psychical decay? Is it true that the French and the Germans of our time are feebler than those who lived in the last century or even in the Middle Ages? One may at least doubt this, if one thinks of the enormous burdens supported by the nations of contemporary Europe, and of the immense labour that they accomplish in all spheres of human activity. In reality neurasthenia is equally spread amongst all civilised peoples, in whom the struggle for existence keeps up an incessant and exaggerated exaltation of the functions of the nervous system. Hence it is extremely frequent among Americans, whose extraordinary activity is well known, and among the nations of Europe that lead the van of civilisation. If it became particularly common in the course and at the end of the nineteenth century, that is because the conditions of social life were abruptly modified, both economically and politically.

Formerly the different social classes were penned, as it were, behind impassable barriers,

and very few except the strong sought to leave the surroundings in which the chance of birth had placed them. To-day, laws and customs have abolished those barriers; everyone endeavours to raise himself higher than his ancestors; competition has increased; conflicts of interests and of persons have multiplied in all conditions of life; free course is given to ambitions that are often little justified; a crowd of individuals impose on their brains a work beyond their strength; then come cares and reverses of fortune, and the nervous system, under the wear and tear of incessant excitation, at last becomes exhausted. Thus may be explained the increasing frequence of neurasthenia in our time, and its predominance in towns, among the middle and upper classes, in a word in all circumstances where intellectual culture or commercial and industrial traffic are carried to their highest degree of intensity.

These considerations enable us already to foresee that over-pressure, and especially cerebral over-pressure, must figure in the front rank of the causes of neurasthenia.

Age.—The disease is not equally frequent at all ages. Very rare in childhood and old age, it affects adults by preference, that is to say it attacks man in the most laborious and most harassed period of his existence, from his twentieth to his fiftieth year.

There is however one form of neurasthenia that

may be described as precocious neurasthenia, and that we have often observed. It makes its appearance about puberty or a little later, and seems to be connected with an exaggerated growth in height. It is found in patients who are notably taller than the average, and whose girth of chest and volume of muscles are not proportionate to their height. These neurasthenics almost always belong to the male sex. They are "long lean" persons, whose nervous system is endowed with excessive fragility and yields to the slightest shock.

Sex.—Neurasthenia is commoner among men than among women. Out of a total of 828 patients, von Hösslin[1] counted 604 cases in the male sex, and only 224 in the female sex. This unequal division of the disease between the sexes cannot be explained by a special predisposition on the part of the male sex. Here again appears the preponderating influence of stubborn labour, of cares, and of excesses of all sorts, consequences of the more active and more militant part played by man in the struggle for existence.

Profession.—The distribution of the cases among the professions is no less significant. The statistics that have been drawn up from this point of view show clearly the predominating influence of cerebral over-pressure in the development of neurasthenia. Among 598 patients were found:[2]

[1]Von Hösslin, in *Handbuch der Neurasthenie*, herausgeg. von Franz Müller, Leipzig, 1893.

[2]Von Hösslin, loc. cit.

Merchants and manufacturers	198
Clerks	130
Professors and teachers	68
Students	56
Officers	38
Artists	33
Without profession	19
Medical men	17
Agriculturists	17
Clergy	10
Men of science and learning	6
Schoolboys	6
Working men	6[1]

Although they have merely a quite relative value, these figures are none the less instructive. They show the extreme rarity of the neurosis among the labouring class, and its almost exclusive limitation to the cultivated classes, to the world of affairs, and to the liberal professions, in a word, to the social categories whose circumstances involve them in habitual brain-work.[2]

[1]These figures, added together, make 604.—*Trans.*

[2]Petrén maintains that in Sweden neurasthenia is commoner among the artisans and peasants than among those more highly placed socially; and that the rush of modern life is certainly not the chief exciting cause, for the majority of cases come from provincial parts of Sweden, where life is simple and tranquil. (See *British Medical Journal*, 1901, Vol. II., p. 736). Prof. Clifford Allbutt has found in England that "neurasthenia is found no more in the "market-place than in the rectory or in the workhouse; no more in "busy citizens than in idle damsels." (*Syst. of Med.*, 2nd Ed., Vol. VIII, p. 738). He also points out that v. Hösslin wrote from a sanatorium for the well-to-do, so that he would naturally see more cases from those classes (Ib. p. 739). See also pp. 25-28 of this work.—*Trans.*

CHAPTER II.

SPECIAL CAUSES.

HEREDITY AND EDUCATION.

Heredity.—The great part played by heredity in the development of diseases of the nervous system is well-known. But this etiological factor does not intervene in a uniform fashion in the pathogeny of all nervous maladies. Some neuroses seem more subject than others to its influence, and in any one neurosis its action is exerted in very varying degrees in different cases.

It sometimes happens, as is well-known, that the same type of disease is transmitted from one generation to the generations following. It is then said that there is *similar heredity ;* in such a case the hereditary origin of the malady is quite clear. But it is rarely that pathological heredity shows itself in so plain a form ; and so far as neurasthenia is concerned, we may affirm that examples of similar heredity are exceptional.

In a large number of cases on the other hand, nervous defects are found among the ancestors, the influence of which on the descendants is not

doubtful, but which have changed their form in the process of transmission; we have then *dissimilar heredity*. These are well-known facts. Finally, it often happens that in the line of ancestors of patients affected with various psychoses or neuroses, one can discern, associated or not with neuropathic conditions, or alternating with them, derangements or diseases dependent on the arthritic diathesis, as gout, gravel, or diabetes. This again is a fact of current observation, and nothing is better established than the reality of this dissimilar heredity. Thus it is admitted that nervous diseases, properly so-called, and diseases of arthritic nature are liable to give rise to one another in passing from one generation to those that follow. We see, then, that neuro-arthritic heredity may manifest itself according to very different modes of transmission, and, we must add, with very variable intensity. Sometimes, indeed, morbid heredity alone suffices to give rise to this or that nervous affection, but sometimes—and this is the commonest case—it seems to act only as a predisposing cause and needs to be seconded by exciting or accidental causes. These general principles are commonplace notions to-day; they comprise almost all the relations between heredity and nervous diseases so far as they are known at present. It is unnecessary to add that they are of immense practical interest. Hence it is important that they be always present to the mind of the

physician, whether his object be to avert the effects of a threatening heredity by prophylactic measures, or to determine—sometimes a difficult problem—the shares respectively due to accidental causes and to transmitted lesions in the frequently complex etiology of a declared disease. We have then to ask ourselves here what is the precise rôle of neuro-arthitic heredity in the development of neurasthenia. In this connection we may arrange the cases, in spite of their great diversity, in three groups:

(*a*) There are cases in which the heredity acts alone and suffices to excite the development of the neurosis. Certain subjects sprung from tainted families are continually on the verge of neurasthenia from their birth; their nervous system tires, even in the course of a regular and quiet life, and they are, so to speak, inevitably destined to become the prey of the neurosis.

This hereditary form of nervous exhaustion, arising apart from the common causes of the disease, is indeed rare, but it is interesting to know. For it presents a somewhat special evolution: it is usually precocious; it manifests itself habitually at the epoch of puberty, sometimes even earlier, and it is peculiarly tenacious; consequently it is important to recognise it on the first signs of its onset, for only at its initial period can its development be hindered by submitting the young patients to appropriate hygienic rules.

(*b*) In the majority of cases neuro-arthritic heredity intervenes only as a predisposing cause. It prepares the soil on which some slight or severe accidental cause will make neurasthenia spring forth. The cases belonging to this category are many ; the proportion of neurasthenics in whose antecedents one finds hereditary taints more or less marked, may be estimated at 40 per cent. In this connection we may remark that the hereditary antecedents of neurasthenics are in general less heavily laden than those of patients affected with psychoses, serious neuroses, or even organic diseases of the nervous system. Epilepsy, hysteria, and insanity rarely figure in the genealogy of neurasthenics ; and very often we find nothing more than emotional or hypochondriacal tendencies, hemicrania, or irritable temper in their family histories. It would seem, then, that among the diseases of the nervous system neurasthenia is one of those least dependent on heredity, and that in the greater number of cases the influence of this etiological factor is inferior to that of exciting or occasioning causes. Here we may recall the fact that neuro-arthritic heredity is not the only possible predisposing cause of neurasthenia. Others are infectious or toxic diseases existing in the parents at the moment of conception, or in the mother during pregnancy. Thus syphilis (Kowalewsky),[1] tuber-

[1]Kowalewsky, *Centralblatt für Nervenheilkunde und Psychiatrie*, 1893.

culosis, malaria, alcoholism, lead poisoning in the parents have been justly incriminated in a certain number of cases.[1]

Education.—By the side of hereditary influences we must notice another predisposing cause of the first rank: *defective education.* The vicious methods of education that give rise to, or allow the development of, evil tendencies and irregularities of character in children, may, as can easily be imagined, exert a baneful influence on their physical and moral energy. Too often, through the carelessness of parents or masters, the child, instead of starting life endowed with a firm will and enlightened judgment, has become a capricious and obstinate being, devoid of strength of will and moral firmness. When to these faults are further added badly regulated instruction and an insufficient physical education, or even none at all, the subject is, so to speak, doomed inevitably to give way before every difficulty in the struggle for life. We shall return later to the delicate question of education regarded as a cause of nervous debility, when we try to lay down the prophylactic rules to which those must be subjected whose heredity predisposes them to neurasthenia.

[1]The third group is not given by the author. It consists presumably of those cases in which neuro-arthritic heredity plays no part at all. See page 17. For the subject-matter of the last two paragraphs, see Introduction.—*Trans.*

CHAPTER III.

EXCITING CAUSES.

We have just seen that nervous or arthritic heredity, when it acts in a massive dose, so to speak, is capable by itself of giving rise to neurasthenia; but that in by far the larger number of cases its action is limited to preparing the soil on which accidental or exciting causes will later make the disease spring forth. Having thus defined the part played by hereditary defects, we must now recall the fact that their intervention is by no means necessary. Neurasthenia may develop in an individual hitherto quite free from it, and from any congenital taint, by the sole action of the determining causes that we are now about to consider.

Over Brain-Pressure.—The study of the general causes of nervous asthenia has already enabled us to foresee that over brain-pressure is one of the most powerful factors of that state. Now the examination of individual cases and observations corroborates this assertion in all points. Thus all observers agree in recognising that exaggerated action of the brain is one of the most effective causes, if not the most effective cause, of nervous

exhaustion. But the term *over brain-pressure* is vague, because it is too comprehensive. It is evident that the brain may be subjected in many ways to over-pressure, and as among the modes of cerebral activity there are some peculiarly apt to produce neurasthenia, it is necessary, in order to define precisely the rôle of mental over-pressure in the genesis of the affection we are considering, to group the cases in natural categories and to examine them separately. From our present point of view it is convenient to consider the effects of over brain-pressure in the sphere of the intellectual faculties and in that of the emotions.

Excess of Intellectual Work.—It is certain that intense or too prolonged intellectual work may give rise even in an energetic and well-balanced man to symptoms of a neurasthenic nature, such as insomnia, dyspepsia, persistent headache, etc. Great workers, scholars, scientists, literary men, and young people preparing for examinations often fall at the time of professional competitions,[1] after a period of excessive toil, into a state of cerebral depression, mingled with some symptoms of excitement, which compels them to interrupt their exertions. But in general the forms of neurasthenia that develop under these conditions are neither persistent nor grave. Some days of rest, a stay in the country, or a short hydrothera-

[1]That is, competitive examinations for entry into special training schools or public functions. There are many more of these in France than in England.—*Trans.*

peutic treatment most often suffice to re-establish the equilibrium of the nervous system and to bring about the disappearance of the symptoms. The reason is that in reality intellectual work is one of the least formidable causes of neurasthenia. The man who, without anxiety, without other care than that of research, gives himself up even passionately to purely speculative studies, is in hardly any danger of falling a victim to neurasthenia. If he brings too lively an ardour to his work, or if he prolongs his exertions beyond measure, the result will be a state of fatigue more or less profound according to the degree of resistance of his brain, and nothing more. Fatigue, and the embarrassment of cerebral activity that follows it, will of themselves put an end to this over-pressure, or will at least restrain it within just bounds; the nervous exhaustion that may result from it will in such a case be speedily reparable. We venture to affirm then that, apart from very rare exceptions, intellectual over-work properly so-called is incapable of engendering a persistent neurasthenia; provided always that hereditary defects or depressing emotions do not intervene, as most often happens, to add their pernicious influence to the excess of intellectual work. Depressing emotions in reality constitute a source of fatigue, a cause of wear and tear to the nervous centres, far more powerful than brain-work. Mosso has demonstrated this experimentally and has shown that emotions exert

a much more marked effect on the circulation of the encephalon than does intellectual work, no matter how great its energy may be. In truth, if neurasthenia is especially frequent in the cultivated classes and among individuals engaged in professions that exact habitual and sustained intellectual toil, it is not to the cerebral exertion itself that the evil must be attributed, but much rather to the moral cares, which are more common, and especially more keenly felt, in certain social conditions. The brain-work that over-drives and exhausts is that which accompanies care for the morrow, worry caused by an end to attain, or fear of failure or of a check, whether the matter at issue be one of industrial or commercial affairs in which the fortune is engaged, or one of an examination or competition on which the future depends. Under such circumstances the part that work, in the strict sense of the word, plays in the pathogeny of the neurosis seems to us almost nil or at least very accessory, the true cause of the nervous exhaustion being the disquiet and anxiety in the midst of which the work has been accomplished, the worry that has preceded, accompanied, or followed it. Account must also be taken of the defective physical conditions in which the majority of those live whose social circumstances compel them to brain-work more or less intense. Thus if one did not take care to allow for the part played by the etiological elements that accompany the supposed over

brain-pressure, one would run the risk of greatly exaggerating the share of this last. This is the error that seems to us to have been committed by those educationalists and physicians who, especially in these latter times, have given prominence to the evil effects of what to-day is called *over-pressure in schools*. It is necessary for us to say some words on this subject.

Over-Pressure in Schools.—The question of over-pressure in schools is closely connected with excesses of intellectual work considered as causes of neurasthenia. For the last ten years it has filled an important place in the preoccupations of hygienists. It has been the object of very keen discussions in the press, in the Academies, and even in the Parliaments of different countries, and the stirring of opinion that has taken place round it has had for result an appreciable improvement in our scholastic system. But the reform is still far from being satisfactory and complete. We shall return later to this subject, when we try to indicate the hygienic rules that should govern the physical and moral education of children, especially of those who are predisposed by heredity to nervous exhaustion. For the present we shall limit ourselves to examining the part played by intellectual over-pressure, properly so-called, in the development of the neurasthenic symptoms that school-boys sometimes exhibit.

The injurious influence of cerebral and intellec-

tual over-pressure in schools has certainly been exaggerated. One might even ask oneself if it really exists, and if children are able to put *over*-pressure on their intellectual faculties.

It is certain that the physical and moral health of many pupils in lyceums and schools[1] leaves much to be desired, and that many of them present manifest symptoms of nervous exhaustion. The physicians who have studied the symptoms of the fatigue that is attributed to over brain-pressure in school-boys, remark that it shows itself under two forms: one corresponds to symptoms of morbid excitement, such as insomnia, irritability of temper, nervous laugh, palpitations; the other, which usually follows on the former, corresponds to signs of intellectual sloth and inaptitude for work. It expresses itself in yawning, in frequent desire to sleep, in want of power to fix the attention, and in an expression of languor and sadness on the countenance, which is pale and drawn.

Statistics have been given. Out of a total of 588 pupils in the middle classes of secondary schools, Nesteroff[2] found that 30 per cent. presented symptoms of neurasthenia, such as palpitation, persistent headache, insomnia, intractable neuralgias. He noticed that the proportion of

[1] "Lycées et collèges." Lycées are government schools in the chief towns of departments; collèges are either government schools in smaller towns or private schools.—*Trans.*

[2] *Die moderne Schule und die Gesundheit. Zeitschrift f. Schulen-Gesundheit*, 1890.

those attacked was greater according as the class to which they belonged was higher:

Preparatory Class	-	8 per cent.
First „	- -	15 „
Second „	- -	22 „
Third „	- -	28 „
Fourth „	- -	44 „
Fifth „	- -	27 „
Sixth „	- -	58 „
Seventh „	- -	64 „
Eighth „	- -	89 „

Even supposing—a thing that might easily be contested—that the nervous troubles that served as a basis for this enumeration were all of a neurasthenic nature, it seems to us impossible to admit that over brain-pressure was the only agent responsible.

It is evident that over-pressure can hardly exist at all in primary schools. In secondary schools there can be no doubt that it exists for only a small number of the pupils, namely those who wish to attain and keep the highest positions, or those who are preparing for an examination. The boys who sin from excess of zeal are rare; the greater number protect their own cerebral health by spontaneously refusing all excess of work. Mr. Galton has very justly brought this forward in his interesting study of mental exhaustion in schoolboys:[1] "It is among those who are zealous

[1] F. Galton. *Journal of the Anthropological Institute*, Nov. 1888.

and eager," he says, "who have high aims and "ideas, who know themselves to be mentally gifted, "and are too generous to think much of their own "health, that the most frequent victims of overwork "are chiefly found." Now the great majority of boys in the middle forms of schools are devoid of these exceptional qualities. They simply stop work when they are tired, and rarely push their exertions to the point of real exhaustion. It is only at the age of sixteen, seventeen and eighteen, when they have to pass examinations or enter for competitions in order to be admitted into special schools, that young people may commit real excesses of brain-work. Over-pressure in the sphere of the intellectual faculties is produced only by efforts of will of which children are incapable (Charcot). If then one considers the population of lyceums and schools in its entirety, one sees that, in spite of the overburdening of educational programmes, it escapes almost wholly from the injurious influence of intellectual over-pressure; and that it is only adolescents, in whom will and the feeling of an end to be attained are developed, who are capable of putting over-pressure on themselves to the point of genuine nervous exhaustion.

The majority of the disorders of the nervous system observed in children and school-boys of all ages, which some have tried to place to the account of over brain-pressure, are much rather the results of the defective hygienic conditions in

which those boys live who are subjected to the evil discipline of boarding schools : too long hours of study and of classes, and in consequence too sedentary a life, prolonged stays in a vitiated atmosphere that grows worse and worse as the hours of work go on, habits of onanism, imperfect physical exercise, insufficient hours of sleep. This moreover is the conclusion come to by those neurologists who have studied with some care the neurasthenia of the boarders in lyceums and schools (Hasse, Krafft-Ebing, Meynert, von Hösslin).

Moral Over-Pressure.—The depressing emotions, that is to say, vexation, anxiety, disappointments, remorse, thwarted affection, in a word all states of sorrow and disquiet—these are the usual causes of nervous exhaustion.

Moral over-pressure, in its multiple forms, is certainly the most powerful and also the most wide-spread factor in the production of neurasthenia. We have noted that it almost always associates its always evil influence with the less effectual and more uncertain action of intellectual over-pressure, and that to it is due a great part of the bad results attributed to the latter. The same remark might be applied to the other causes of neurasthenia, of whatever nature they be. All physicians who have the opportunity of seeing a large number of neurasthenics, and who take care to enquire into the circumstances in the midst of

which the disease has appeared, know that there are very few states of nervous asthenia at the bottom of which one cannot distinguish some mental trouble. It might be affirmed without exaggeration that the majority of neurasthenics have been more or less affected on the *emotional* side. Among the causes of depressing emotions that intervene so often in such cases, we must mention especially the death of children, mourning, reverses of fortune, and the cares of material life. It can easily be imagined that causes of this order exert their influence in all classes of society. Thus the majority of the cases of neurasthenia observed among the poor, and notably among hospital patients, who evidently escape the other modes of over brain-pressure, are dependent on this origin.

Life in Society.—Life in society must figure among the possible causes of over-pressure. Not that it necessarily exacts an increased expenditure of cerebral activity; but it exposes those who lead it to multiple sources of fatigue. Although it is especially open to the idle, it leaves little time for the restful leisure of one's own fireside, or the calm and cheering distractions of *home*. None are more busy, it is said, than those who do nothing; an aphorism which is truer than its paradoxical appearance might lead one to think. One can easily be convinced of this by picturing to oneself the existence led, especially in the Parisian world, by those who are called in the current slang "society"

men and women. Those who go out much, and especially women, have their whole day taken up by the duties that convention and the vain care of their reputation impose on them : visits, dinners, balls, and evening parties make their life one of continual constraint, and of obligations without respite. Fashion, which has introduced among us for the present a tendency to copy English habits, and which has momentarily (for every fashion is short-lived) caused a taste for passing the morning in open-air walks and athletic sports to enter into the manners of "select" people, mitigates in a certain measure, it must be said, the serious disadvantages of a style of existence contrary to all the rules of hygiene. It mitigates, but does not abolish them. If one reflects on the conditions of life in society, as it is led among us (and M. Melchior de Vogüé has shown that in this respect Russia is not behind us), on the excitements of all sorts that it occasions, on the physical fatigues that it brings on, and that almost inevitably result from the habit of too long and too copious meals in rooms that are often over-heated, on late hours, and on insufficiency of sleep, at least of sleep at the proper times, one will not be astonished that it frequently causes the development of nervous asthenia. This is all the more easily understood because such a wholly artificial and fictitious existence almost necessarily brings in its train a sort of moral over-pressure, due to the paltry efforts

made to realise the whims of vanity, or to the vexations of self-esteem that the incomplete satisfaction of those whims occasions. Nothing is so enervating, nothing so fitted to unbalance and weaken the nervous system, as to be wholly taken up with the pursuit of pleasure and the satisfaction of the least elevated and least noble desires. A lively interest in the useful part that each of us can fill in his position according to his aptitudes and faculties, is not only a moralising element, but is also in certain respects a condition of health; and neurasthenia is often the natural but regrettable penalty paid by uselessness, idleness, and vanity.

Muscular Over-Pressure.—Is muscular over-pressure also capable by itself of engendering neurasthenia? This does not seem to us absolutely demonstrated. The examples quoted are rare, provided always that care is taken, as it should be, to count only those cases in which excessive muscular work appears to be the sole etiological factor that can be incriminated. For our own part, we have not observed a single case of this nature, but they are found here and there among authors. Such is the case whose history M. Bouveret has related, which concerns a smith employed for ten years in ironworks at particularly laborious work, necessitating a considerable expenditure of muscular force. This man did not exhibit any symptoms of organic affection of the nervous centres; but he complained of a dull

continuous pain in the forehead and at the back of the neck, and he suffered from insomnia and from such weakness that after walking for a few minutes he felt more or less exhausted. Moreover he had become so impressionable as to be seized with trembling on the slightest emotion.

This case seems convincing; but it would have been still more so if mention had been made that there had been no uneasiness, no acute worry, and no moral shock in addition to the physical over-pressure, which had done their share in depressing this robust workman, and aided in the development of his malady. In this connection we have recently come across the following case, which is not wanting in interest. The patient was a young fencing-master who exhibited all the signs of confirmed neurasthenia. As this man had felt the first attacks of his illness after a series of violent and prolonged assaults, it was thought that it should be attributed, as he attributed it himself, to the excess of muscular fatigue imposed on him. But on questioning the patient it was learnt that the excessive muscular work that he had indulged in had taken place in preparation for a fencing tournament, the result of which was of the highest importance. During the days that preceded the public assault in which he was to appear, this young man had been in such a state of over-excitement that he had lost his appetite and his sleep. The result of the ordeal having been to his disadvantage, he was seized with

keen vexation, and became gloomy, depressed, and subject to frequent headaches ; he grew more and more uneasy about his condition, and finally fell into confirmed neurasthenia. Evidently, in this case, physical over-pressure seems at the first glance to have been the sole cause of the nervous exhaustion; and yet everything warrants us in holding that the uneasy preoccupation in which the patient lived while waiting for an ordeal very important for him, and the discouragement that followed his failure, played some part, probably the essential and perhaps the sole part, in the genesis of his complaint. We have been anxious to cite this case, because it shows clearly how easy it is, in the absence of a careful inquiry, to attribute to this or that etiological element—to muscular over-pressure in the present instance—a pathogenic influence that it does not really possess. It seems to us that this remark is applicable to the few cases of neurasthenia from muscular over-pressure that have been published up till now. To sum up, it does not appear to us proved that exaggerated activity of motor centres and muscles can give rise to lasting nervous exhaustion. Cases of this kind, if they exist at all, must certainly be very rare.

Intoxications.—Intoxications, or at least the habitual and prolonged abuse of toxic substances, incontestably figure among the etiological factors of neurasthenia. In this respect we must mention above all the abuse of alcohol and tobacco, and the

use of morphine and cocaine, whether taken by the stomach or subcutaneously.

But we must first come to an understanding as to the action of these substances on the nervous system. We know that certain poisons, especially alcohol and cocaine, produce on the brain and spinal cord effects that are to some extent specific, in virtue of which those organs react in ways that vary according to the nature of the toxic agent that has affected them. The hallucinations of the alcoholic are not the same as those of the cocainist; the symptomatology of morphinomania differs, it is needless to say, from that of nicotinism. Now neurasthenia, when it is due to one or more of the intoxications of which we have just spoken, does not present special features connected with the special cause that has produced it.

This seems to show that if toxic substances are able to bring about neurasthenia, it is in virtue of a general, and perhaps indirect, action on the nervous system, very different from their specific action.

And, in fact, it seems in such cases that the derangements of digestion, nutrition, and sleep that are common among those who abuse these poisons, as well as the peculiar moral condition of the majority of such persons, are not unconnected with the genesis of the neurasthenic state.

Among the intoxications that sometimes provoke this state, mention must also be made of certain professional intoxications, notably those due to lead,

mercury, and bisulphide of carbon. But in this class of cases, phenomena of a hysterical nature are known to be usually associated with the symptoms of neurasthenia; one has then to do with hystero-neurasthenia, of which the poisons that we have just enumerated are powerful exciting agents.

Various Infective and Organic Diseases.—It is well-known how capable infective diseases are of deranging, by changes that are either fine or coarse, the nutrition of the brain, spinal cord, and nerves. By determining vascular disorders and by throwing toxins into the organism, they frequently impair the anatomical and functional integrity of the nervous elements. Thus the majority of the authors who have written on neurasthenia have ranked infective states among its most efficacious causes (Beard, Hamilton, Berger).

Typhoid fever, influenza, and malaria have been especially incriminated. It is sometimes in the course of convalescence, but most usually when the general health of the patients seems to have been already restored to its normal state, that the first symptoms of the neurosis are seen to appear. We do not deny that the various infections may themselves give rise, apart from all hereditary predisposition, to a well-marked neurasthenic state; but we think that in the majority of cases the infective malady acts chiefly as a predisposing cause, by diminishing the resistance of the nervous centres and rendering them more vulnerable. On carefully

questioning patients of this class, one frequently finds that their neurasthenia did not appear till after an emotion, a fright, or vexations had come to agitate their brains during convalescence. This is especially true of syphilis (Fournier), blenorrhagia, venereal diseases in general, which are all of them powerful factors in the production of neurasthenia, but which act principally through the medium of the fear, the distress, and the disquiet into which they throw the greater number of the patients attacked by them.[1] The same is true of tuberculosis, Bright's disease, and heart complaints. These are only accessory causes, and would doubtless be insufficient to give rise to the neurosis if they were not at the same time a source of alarm, of gloomy thoughts, and of distressing worries for those whom they affect. Nevertheless the part played by the moral element in the genesis of neurasthenia must not be exaggerated; and we have no doubt that certain infective diseases may exceptionally be the sole cause of the affection. This is so at least in the case of influenza, the affinities of which for the nervous system are well known, and which is frequently found at the origin of neurasthenia.

Charcot has shown that neurasthenia, like hysteria, sometimes associates its symptoms with

[1]Dr. Dana holds that "antisyphilitic treatment can certainly "bring on or bring out a neurasthenia. A combination of secondary "syphilis with the excessive use of alcohol leads to a very obstinate "type of neurasthenia." (Twentieth Century Practice of Medicine, Vol. X., p. 740).—*Trans.*

those of organic diseases of the nervous system. In fact it is not rare to see well-marked neurasthenic conditions associated with spasmodic spinal paralysis, or disseminated sclerosis of the cord, or locomotor ataxy, or even with general paralysis (Régis).

Here again it seems to us more just to blame the worry and profound gloom that the thought of a grave and incurable malady keeps up in a cultivated mind, than to suppose that some vague influence is exerted by the spinal lesions on the other nervous centres, and that this influence produces by a sort of action at a distance the slight disorder from which the symptoms of nervous exhaustion proceed.

Frights and Traumatisms.—Neurasthenia sometimes develops under the immediate influence of an intense and sudden emotion, and especially of a sharp fright. In fact this emotional state is able to bring on in a few days, or even in a few hours, the appearance of the characteristic symptoms of nervous exhaustion. All authors who have written on the causes of neurasthenia and on the pathology of the emotions have seen and related cases of this kind.

It is to the fright occasioned by accidents, with their often dramatic circumstances, that the majority of the cases of *traumatic* neurasthenia must be referred. We shall say some words later on this form of the affection, which is principally

observed as a sequel to great shocks provoked by public catastrophes (railway accidents, earthquakes, etc.). The mental shock in these cases plays a much more important part than the physical, the proof being that it is not in the most seriously injured persons that the affection develops.

Dyspepsia.—Genital Disorders.—Utero-ovarian Affections.—It is a very generally accepted opinion that certain dyspeptic states, certain genital disorders, and utero-ovarian affections in women are sometimes the starting-point and first cause of neurasthenia. On these data have been built a certain number of pathogenic theories which we shall set forth later in a special chapter. As disorders of the same kind, affecting the same systems (stomach, intestines, genital organs), form an integral part of the clinical picture of neurasthenia, the discussion of their relations to it will be best deferred till after the description of the symptoms and forms of the disease.[1]

Summary.—At the conclusion of this rapid analytical study of the causes of neurasthenia, let us cast a glance backwards on the positions that we have just developed, in order to sum them up and to foreshadow briefly their practical bearing.

All the causes that we have enumerated have not the same efficacy nor the same frequency. The

[1]Other exciting causes are: frequent child-bearing, lactation, relaxing climates (see p. 322, lines 1 to 3), and auto-intoxication (see p. 129, lines 1 to 3).—*Trans.*

predisposing cause above all others, that which prepares the ground in the greater number of cases, and facilitates the action of the exciting etiological elements, is *neuro-arthritic heredity*.

Its intervention, however common it be, is yet not indispensable. There is no doubt that neurasthenia can be brought into existence de novo; one may even say that it constitutes one of the gates of entry, perhaps the principal gate, into the ground of pathological heredity; it is the first bough of the genealogical tree, with its many and bushy branches, that represents the neuropathic family.

In addition to heredity, but after it, come: first, *bad education*, which allows the original vices of constitution to develop freely, and which sends forth into life subjects badly prepared for the struggle, and physically and morally enfeebled; then *puberty*, with its new sensations, and the thoughts and appetites it gives birth to, which, if ill-regulated, may profoundly disorder the nervous equilibrium.

Then come all the exciting causes, weak or powerful, acute or chronic, sufficing or secondary, the common effect of all of which is to weaken the nervous system or to overpower its resistance: bad hygiene, exaggerated business cares, excess of work, the preoccupations of ambition, abuse of alcohol and tobacco, acute or chronic diseases, utero-ovarian affections in women, traumatic shocks, and above all *depressing emotions*.

This study of the causes of neurasthenia serves to give us the key of the indications to be fulfilled in the prophylaxis of the affection. But we must not lose sight of the fact that, in reality, the etiological factors concerned are almost always multiple. It is not the easiest part of the physician's task to discover which are principal and which accessory among these factors, and yet he must not forget that on the appreciation of the part played by each of them depend, in great measure, the hygienic rules to be laid down and the therapeutic treatment to be prescribed.

PART III.

SYMPTOMS AND CLINICAL FORMS OF NEURASTHENIA.

CHAPTER I.

GENERAL PICTURE.

The functional troubles complained of by neurasthenics are both very many and very varied. They group themselves in a hundred various ways, giving rise in different cases to clinical pictures of very great diversity. Moreover, each of the symptoms of neurasthenia, considered by itself, varies from one case to another: attenuated to the point of being almost negligible in one patient, accentuated and disquieting in another, absent in a third. It follows that, in order to be in a position to regulate suitably the therapeutic treatment of each patient, the physician must first enquire attentively into the functional disorders present, and draw up a balance-sheet, so to speak, noting carefully the bearing and importance of each of them. Among these disorders there are some that are really of little importance and that may justi-

fiably be neglected; on the other hand there are some that, by reason of their intensity and the function that they derange (dyspeptic disorders among others), react on the patient's general condition and help largely to keep up the nervous exhaustion. This leads us to trace, in the present study, not a methodic description of all the signs of neurasthenia, but a sufficiently explicit picture of the principal appearances that may be presented by the leading symptoms of the disease and by the different forms that this last may assume; each of these indicating, as we shall see, special therapeutic treatment. Now in practice it is not always easy to state precisely the exact form of a patient's neurasthenia. And in fact one frequently runs against difficulties arising from the subjective character of the symptoms and from the patient's mental state.

There are few patients whose examination demands so much patience and tact as that of neurasthenics. In the presence of symptoms almost completely wanting in objective characters, the physician has no other means of information than the statements, and even the lamentations, of the invalid; now there are few persons who are capable of precise observation and exact appreciation of their own functional disorders. From the point of view of the physiognomy of the disease, it is customary to arrange neurasthenics into two groups: those who are much depressed, speaking

little and answering badly the questions put to them, and those who seem excited and speak too much. The *depressed* neurasthenic, whether he be a workman who is the victim of a traumatism, or a man crushed by some affliction, presents himself under an almost uniform aspect that strikes one at the first glance. M. Bouveret has drawn a very accurate picture of him :—" The patient is pale and thin, " without strength or courage, and always sad and " dejected. He sees everything from the worst " side. He rarely smiles. He goes along with " his head down, avoiding the looks of others, " his eyes languid and dull. He hardly dares look " people in the face when he speaks to them, and " the vagueness of his look is as it were a sign of " powerlessness, an avowal of the inferiority of his " moral strength. He always has the gait of a " tired man; he is usually very sensitive to cold, and " is clothed in summer almost as in winter; his speech " is slow, broken and trailing; this neurasthenic is " not talkative." So little talkative is he, that, if he be accompanied by some friend, one sees him, at the first words that the physician addresses to him, turn to his companion as if to beg him to answer in his place; just as general paralytics often do. If he be pressed to reply, and to explain the causes of his illness and the seat of his sufferings, he does so briefly and in short sentences: " I have a headache," " I have a pain in the stomach," " I have pains all over," " I am tired," " I am weak," "I can't work."

And there is great difficulty, at least on a first examination, in getting from him any circumstantial details.

Other neurasthenics present themselves with every appearance of perfect health. They are plump and fresh-complexioned and their looks show confidence. They are capable of a certain amount of activity. Their actions are lively, their speech ready, and, at the first questions put to them, they rush with animation, one might say with pleasure, into an interminable recital of discomforts, disagreeable sensations, sometimes even pains, that contrast with their healthy appearance. They hardly inspire pity, and among those about them, witnesses of the variability both of their temper and of the symptoms they complain of, they usually pass for " malades imaginaires." To judge from Beard's description, this variety of neurasthenic seems to be especially frequent among the Americans. It is in this class of patients that is most often met the type that Charcot has distinguished by a picturesque title, "The man with slips of paper." This man imagines that the physician will " misunderstand " his condition if he does not inform him of even the smallest symptom of his affection; he is afraid of forgetting some detail that might possibly be of importance; he knows the weakness of his memory and doubts his other faculties, or else he has noticed in previous consultations that the recital of his ills took up too

much time; and so, at the very beginning, or after a short conversation, he brings out the manuscript statement of them in the form of a list or of a complicated description.

Between the two extreme types of neurasthenics that we have just sketched, there is, as may easily be imagined, a crowd of intermediate forms that we cannot describe here. Besides, whatever be the class to which they belong, whether they be excited or depressed, and however intelligent they may be, neurasthenics almost always give, either in speaking or in writing, an incoherent and diffuse description of their functional disorders, which the physician can only accept after having verified the details by an attentive inquiry. Some describe minutely, with unwearying insistence, symptoms of a secondary order, and hardly mention those of real importance. Others speak abundantly of their headache and their muscular weakness, but deliberately conceal their emotionalism, their childish fears, their states of anxiety, and the powerlessness of their intellectual faculties, all symptoms which it would offend their self-esteem to confess.

Consequently the line of conduct to be followed with these patients is very delicate for one who wishes to acquire an exact knowledge of their pathological condition. First of all it is necessary to gain their confidence by listening patiently, and as if with interest, to the long and confused recital of

their sufferings. One can then fix their attention on this or that functional disorder, and obtain precise information on the characters and intensity of this symptom. By proceeding thus with methodical enquiries, prudently directed and often repeated, the physician will be able little by little to check the statements of the patient, separate the true from the false, and arrange the symptoms according to their clinical importance, disentangling those of leading importance from those that are secondary.

In every case it is advisable to search out and study in the first place the symptoms that are characteristic of nervous exhaustion, and that may be called fundamental.

CHAPTER II.

LEADING SYMPTOMS OR STIGMATA OF NEURASTHENIA.

In the total group of morbid phenomena presented by neurasthenics, there is a certain number of symptoms that clinicians have been led to distinguish and to rank in some sort above the others, and to which writers on nosography are careful to give prominence in their descriptions, because these symptoms are in reality more frequent and more characteristic than any of the others. Comparable in this to certain permanent and fundamental signs of hysteria, they well deserve the denomination of *stigmata* of neurasthenia that Charcot proposed to give them. They are: *persistent headache*, *rachialgia*, *neuro-muscular asthenia*, *dyspepsia from gastro-intestinal atony*, *insomnia*, and finally *cerebral depression*, sometimes accompanied by peculiar mental symptoms. These cardinal symptoms usually show themselves from the outset of the affection; they constitute its first manifestations, and only disappear with the disease itself. They always figure wholly or in part in the train of functional disorders, whatever

be the form under which the neurasthenia develops, or whatever be its cause. The neurasthenic stigmata are valuable landmarks for the clinician. Besides, it is not rare for them to exist alone or almost alone, and to form together a clinical group of symptoms that answers exactly to one of the commonest forms of the disease. The physician must consequently set himself to search out the existence of these primordial functional disorders, and to note their forms and variations in each patient. Some of them, notably the digestive and mental disorders, will be able to furnish him, after a judicious analysis of their characters, with useful indications from the therapeutical point of view.

a. **Headache.**—This is a common symptom, existing in three-quarters of the cases. The neurasthenic headache has very special characters. It is not painful in the proper sense of the word; the sensation is most often one of pressure, of fulness, or of constriction, which in the end reduces the patients to despair. It seems to them, they say, that they carry a ponderous weight on the head, or else a head-dress too heavy and too tight. This is what Charcot called the *casque neurasthénique.* The headache does not always extend over the whole cranium; it is fairly frequently limited to the occiput *(plaque occipitale).* Many patients, in fact, when asked the position of the pain, immediately place their hands on the back of the neck,

thus incriminating the *cerebellum*. On other occasions it is localised in the forehead, the temples, or the vertex. Certain neurasthenics complain particularly of a sensation of pressure and tightness situated at the root of the nose or on the eyeballs. Others mention feelings of emptiness, or of bodies floating inside the cranial cavity. It seems to them that inside the skull they have something like a liquid which moves in various directions, and, when rotating the head, they often notice crackings at the back of the neck in the upper part of the vertebral column.

The neurasthenic headache is sometimes continuous and incessant, but most frequently it passes through alternate phases of exacerbation and remission, which usually succeed one another in the following fashion: in the morning, as soon as he rises, the patient suffers from headache; this increases in intensity, especially when he is fasting, in the moments preceding lunch; during this meal it lessens, and often it even disappears entirely. This state of well-being lasts ordinarily for a quarter of an hour or half an hour, at the end of which period the work of digestion begins to make itself felt with all the discomforts that accompany it; the heaviness of the head reappears, at first violent, and then more feeble till the evening. All intellectual work, reading, composing a letter, a conversation however short, an emotion, noise, all augment the headache. During the paroxysms the

patients sometimes experience so keen a hyperæsthesia of the scalp that they cannot bear their hair to be touched (Beard); they also complain of humming in the ears and of feelings of vertigo. The exciting cause of these paroxysms cannot always be discovered; they sometimes come on without apparent reason, and alternate with longer or shorter periods of respite, without anything to indicate the influences that govern these variations.

b. **Rachialgia.**—The troublesome or painful sensation that neurasthenics experience in the back, along the vertebral column, are very similar to those that constitute their headache. *Rachialgia* however is less common than headache. It usually consists of sensations of pressure, of dragging, or of discomfort,[1] that may occupy the various regions of the spinal cord, but are most often situated at the level of either the seventh cervical vertebra, the lumbar vertebræ, or the sacrum. This last localisation is certainly the commonest (Charcot's *plaque sacrée).*

The rachialgia, however, may show itself under other aspects. Some patients complain of having, along the whole of the vertebral column, a sensation of vaguely painful stiffness, or of aching, which hampers them in their movements. These deeply situated, more or less uncomfortable sensations, are generally increased by walking, by

[1] or heat, or burning (see p. 94).—*Trans.*

standing, by bending the body and by straightening it again, and in women at the period of the menses. Sometimes they are accompanied by a genuine hyperæsthesia of the skin; in such cases, by pressing even lightly on the tips of the spinous processes, one can set up a keen pain comparable to the shooting pains of neuralgias.

When the rachialgia is so intense, and really painful and tenacious, it is frequently combined with sensations of heaviness in the lower limbs, and with hyperæsthesiæ of the genito-urinary organs. These are the cases that some pathologists have described under the name of *spinal irritation*; spinal irritation does not constitute a distinct morbid species, but is merely a clinical form of nervous exhaustion.

c. **Neuro-muscular Asthenia.**—Weakening of the motor energy is one of the commonest symptoms of neurasthenia. There are few neurasthenics, even among those least depressed, who have not lost a notable part of the muscular activity that they possessed before the onset of their malady. In its slighter form this functional disorder consists simply of a continual feeling of fatigue, which exists in the morning from the moment of awaking, and which the majority of patients complain of spontaneously. In this degree it does not prevent the patient from attending more or less well to his daily occupations. When it attains a higher degree, the sufferer complains bitterly of

his feebleness; he cannot complete the simplest acts in one effort, however short, without immediately feeling an insurmountable lassitude. To stand, to walk, or to talk, each causes him fatigue. It seems as if his reserve of motor energy were so insufficient that the slightest effort exhausts it; as Beard remarks, these neurasthenics are always on the verge of muscular fatigue; everything prostrates them. One can easily understand that this symptom, when it is somewhat accentuated, may interfere seriously with the patient's mode of life. There are some whose powerlessness to move compels them to abandon their professions.

The ergographic investigations made by us in collaboration with Jean Philippe[1] have enabled us to bring out clearly certain objective features of this amyosthenia.

By means of the apparatus known as Mosso's ergograph, the movements of the index finger of the right hand are registered as it raises a weight attached to it by a thread. The results obtained differ according as the subject is healthy, is suffering from muscular atrophy due to any cause (myopathy, neuritis or myelitis), or is neurasthenic.

In the case of the first of these (the healthy individual—fig. 1), if the finger be made to work till the moment of complete exhaustion, the height of the tracing showing the force of the contractions becomes progressively less. When this height

[1] G. Ballet and Jean Philippe, *Congrès des aliénistes et neurologistes*, Brussels, 1903, and *Société de Neurologie de Paris*, 5 Nov., 1903.

approaches 0, if the contractions are then separated by intervals of 10 seconds, it is found that the flexor muscle not only recovers its power of action, but also ceases to become fatigued. The tracings of the contractions thus separated are all practically of the same height.

In patients suffering from muscular atrophy, the results are similar to those obtained in the case of the healthy, the only difference being that, as the atrophied muscles are capable only of feebler efforts, the height of the tracing is less (fig. 2).

In neurasthenics (fig. 3) the results are different. After reaching the point of exhaustion the muscle recovers its power of action either not at all or only very slowly. In other words, the interval of 10 seconds, which is enough to allow a healthy or atrophic muscle to eliminate the fatigue caused by the previous contraction, is insufficient to bring about a similar result in a neurasthenic. *Fatigue is more lasting in the neurasthenic than in the healthy man, or even in the patient suffering from muscular atrophy.*

Amyosthenia, in a good many cases, presents this curious peculiarity, that it seems to be localized in certain groups of muscles, or at least to manifest itself only on the occasion of certain movements. Here are some striking examples: A pianist is affected with nervous exhaustion in consequence of a violent emotion; among other neurasthenic symptoms, he complains of a singular

Fig. 1.
Ergogram of healthy man.

Fig 2.
Ergogram of patient with muscular atrophy.

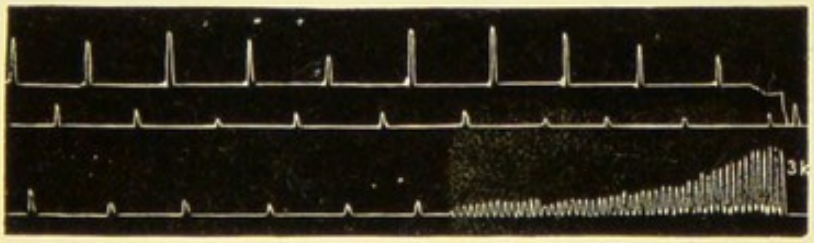

Fig. 3.
Ergogram of neurasthenic.

All the figures to be read from right to left, beginning, in fig. 3, with the lowest line.

[To face page 50.

weakness in his upper limbs; directly he begins to play the piano he feels, he says, a painful lassitude in the whole length of his upper limbs, which rapidly compels him to stop playing; yet he is able to practice fencing for a long time without feeling any fatigue in his arms. M. Bouveret relates the following case : A business man became neurasthenic after a fright; he was affected by neuro-muscular asthenia in the lower extremities almost exclusively; he was absolutely unable to remain standing for more than ten minutes, at the end of which time the sensation of weariness appeared so quickly, and became so great, that he was obliged to sit down or rest his knee on a chair. This localisation of amyosthenia in the lower limbs is especially common in the neurasthenia of women, in which it is sometimes the dominant symptom. Some patients, harassed and disheartened by this permanent weakness, gradually give up both walking and standing; they refuse to go out, and spend their days lying on a sofa.

There is another feature of this asthenia that deserves to be insisted on, namely, that it never goes so far as to bring about a true paralysis, and that in the majority of cases, although it is more or less continuous, yet it varies from day to day, one might almost say from one moment to another, diminishing, disappearing, increasing, and this from causes that are diverse, but chiefly of a mental nature.

When we study the mental state of neurasthenics, we shall see that this motor impotence depends much more, at least in some cases, on a purely psychical disorder than on rapid exhaustion of the motor cells or muscles, as is generally believed. The neurasthenic, like some patients with ataxia, disseminated sclerosis, or other organic diseases of the spinal cord, unconsciously magnifies the disorder by which he is attacked. His mind comes to believe in a readiness of fatigue and a loss of power more marked than is really the case. It is in this way that mental processes come to play an important part in the patient's subjective disorders. This view has some practical importance; we shall see later what profit may be drawn from it from the therapeutical point of view.

d. **Insomnia.**—This symptom of nervous exhaustion is not rare, but it is far from being constant; it is often absent in the neurasthenia of women, and is especially found in the cerebral form of neurasthenia, when this has developed under the influence of excessive intellectual work or of worry. The insomnia of neurasthenics shows itself under varying characters. Among the patients affected by it, there are some who go to sleep readily as soon as they are in bed, but after some instants awake suddenly in a state of excitement that persists, no matter what efforts they make to calm themselves; they are restless

and turn about in their beds, and it is only at an advanced hour of the night, or even at the approach of day, that they succeed in falling asleep again. Other patients go to bed with the fear, or even the conviction, that they will not sleep. And, in reality, it is extremely difficult for them, often even impossible, to fall asleep for a single moment; they are kept awake by a sort of mental disquiet or incessant cogitation, because their minds are harassed by a rapid flow of images, ideas, and memories, in quick association and impossible to repress. Finally, in a certain number of cases, the insomnia cannot be explained in any way; it is purely and simply the absence of an inclination to sleep. The person is calm, his mind is at rest, no thought disquiets or torments him, and yet he cannot sleep.

Dreams are very frequent; they are almost always disagreeable, and the patient finds himself in a painful position in them; he is witness of some frightful drama and runs the greatest dangers, or else he is victim of a serious accident, sees himself pursued by assassins, or is present, but helpless, at the violent death of some one dear to him. These nightmares are especially frequent in cases of traumatic hystero-neurasthenia, and of nervous exhaustion following on sudden and violent emotions. Such terrifying dreams make the patients start, wake them abruptly, and leave them in a state of distress or agitation which for a long time

prevents the return of sleep. The dreams of neurasthenics have not always these violent forms; they may last the greater part of the night without breaking the sleep of the patient, but such a sleep disturbed by incessant dreaming is almost as little restorative as insomnia itself, and one can easily understand that, on waking in the morning, the invalid's brain-fatigue, uneasiness, and headache are quite as great as though he had not closed an eye all night.

e. **Disorders of Digestion.—Dyspeptic States of Neurasthenics.**—Disorders of the digestive functions fill a very important place in the clinical picture of neurasthenia. Their appearance sometimes marks the very beginning of the malady, and they usually last for its whole duration. Slight or serious, they contribute, through the anxieties and disquietudes that they give rise to in the minds of the patients, and through the disorder into which they throw their alimentation and assimilation, to keep up or to increase the nervous exhaustion.

It is now known from many researches that the states of dyspepsia observed in neurasthenics by no means answer to a single formula. Since the publication of Leube's account of nervous dyspepsia, many authors both in Germany and in France have studied this question with care. Although their conclusions still differ in some important points, this essential principle can nevertheless be

deduced, that the dyspepsia of neurasthenics is far from being always the same, and that the disorder of the gastric functions from which it proceeds is variable in nature and differs greatly in different cases. It follows that in practice the physician must set himself, by using all the means of information at his disposal, to note as precisely as possible the character and the degree of the dyspeptic troubles presented by each subject. Only a methodical analysis of each individual case can lead him to deductions of real importance as to the prognosis and treatment.

1. *Dyspepsia from gastro-intestinal atony.*— The most frequent type of dyspepsia is that which has received the appropriate names of *dyspepsia from gastro-intestinal atony* (Bouveret) and *nervo-motor dyspepsia* (Mathieu). It is with this form that we must begin the analytical study of the digestive disorders that may be observed in neurasthenics.

The dyspeptic group of symptoms of which we are now treating is very common among subjects affected with nervous exhaustion, and, whatever may have been said to the contrary, has characters sufficiently well marked to be easily recognised. It deserves, then, to have a place among the cardinal symptoms or stigmata of neurasthenia. M. Bouveret has rightly described two degrees or forms of neurasthenic gastro-intestinal atony, the slight and the severe; and this distinction seems

to us to be perfectly justified by clinical observation.

Slight form.—In its slight form, atonic dyspepsia does not appreciably impair the general nutrition of the patient. In spite of the digestive troubles from which he suffers, the neurasthenic keeps up his strength and his plumpness; he does not grow thin, but he digests badly. The appetite is generally preserved. It only shews itself unequal and capricious, and it is to be noticed that its variations are governed much more by the moral condition of the patient, and the disposition of his mind, than by the state of his digestive passages. The appetite is maintained when mental depression is feeble or absent, and lessens under the influence of some gloomy thought or distressing emotion. Persistent anorexia is exceptional.

It sometimes happens that the uneasy feelings come on immediately after the ingestion of food. And this early appearance of the digestive troubles led Leube to explain them by an abnormal, but purely mechanical, irritation produced by the food on the terminations of the sensory nerves of the stomach. But, in the majority of cases, the functional disorders do not appear till half an hour or even an hour after meals. Fairly often indeed the patient experiences a feeling of general well-being after eating and drinking; his headache and lassitude are dispelled, and he feels himself stronger and more able to work. This passing

amelioration has been attributed to the absorption of liquid and the momentary raising of arterial tension caused thereby. However this be, the period of euphoria is not long in coming to an end, and then begin signs of laborious digestion. The patient complains of a sensation of weight, of pressure, or of distension at the epigastrium. His head is heavy, his cheeks hot, his face congested. The distress becomes general, and he suffers from oppression and palpitations, and at the same time a feeling of dulness and torpor. He is incapable of any intellectual work; walking and movement in general trouble him, and he sometimes falls into a state of overwhelming drowsiness. During the access of dyspepsia, the abdomen swells in the epigastric region first, and then the gaseous distension spreads to the intestines, so much so that many patients are obliged to loosen their clothing. If a physical examination is made, it is found on percussion that the gastric resonance extends beyond its physiological limits. Sudden pressure on the surface produces a sound of splashing in this region, but this sound is only perceptible during the first few hours after the meal; and this shows that the stomach is merely distended by meteorism, not dilated.

While the gastric digestion is going on, the patient is still further tormented by eructations of inodorous gas. Risings in the stomach and acid regurgitations are exceptional. Finally, at the end

of several hours, when the digestion is finished, everything returns into order till the next meal, which brings back the same series of discomforts and derangements.

The generalisation of the abdominal meteorism, and the constipation that is rarely wanting in these cases, indicate that the neurasthenic atony does not only attack the stomach, but that it also affects the intestines.

Constipation is often established from the first; when it is obstinate and resists the majority of the usual purgatives, it happens that the patients remain three, four, or more days without going to the closet. It is then accompanied by meteorism and by sensations of weight or tension in certain parts of the abdomen. In such cases it becomes the subject of constant hypochondriacal anxieties on the part of the sufferers, and in the end it may be complicated by *pseudo-membranous entero-colitis*. The motor functions of the stomach are not seriously affected in this slight form of atony; the signs of dilatation, in the strict sense of the word, are absent; the sound of splashing is not produced by gastric succussion when the patient is fasting; and if the stomach-tube be introduced six or seven hours after a meal, it is found that the contents of the organ have been evacuated in the normal time. In the end, however, the resistance of the gastric walls is overcome.

The first degree of atonic dyspepsia is often only

the first stage of a process ending in the following form.

Severe Form.—In the second degree of gastro-intestinal atony one again finds, but more developed, more intense, the same disorders that figure in the clinical picture of the slight form. The dyspeptic crisis that follows meals displays itself with the same train of symptoms. What especially characterises this second form is that it seriously impairs nutrition.

The patient grows thin and anæmic and loses his strength; the wasting is all the more remarkable because the quantity of food ingested is often quite enough, and would assuredly suffice for the maintenance of a man in good health. It is usually rapid. In a few months the patient sustains a reduction in weight of 20 or 30 lbs., and sometimes more. In severe cases, especially when the nervous exhaustion has been provoked by a sudden and violent emotion, and is accompanied by intense mental depression, the thinness is sometimes extreme; the skin becomes dry and earthy; the face emaciates, and the aspect of the patient is that of one suffering from cancerous cachexia; and in fact it often happens that these invalids are considered as attacked by gastric cancer. Another remarkable feature of the severe form of neurasthenic gastro-intestinal atony is its tenacity, its long duration, its resistance to the methods of treatment usually employed against dyspeptic conditions; this is especially the case

with neurasthenics advanced in years. In young people, endowed with greater vitality, a notable amelioration of the general condition is sometimes obtained, but recurrences are frequent, and cure, when it is effected, is slow and interrupted.

The motor functions of the stomach are here more seriously affected, and it is not rare for the stomach still to contain food seven hours after an ordinary meal. Dilatation may however be absent in the severest forms, and in the majority of cases it is by no means appreciable till after several years of dyspepsia.

2. *Disorders of the gastric secretion. Pathological chemistry of the stomach.*—Formerly an analysis of the gastric juice of neurasthenics used frequently to be made. If this operation has lost much of its practical utility, it has at least served to fix certain questions of gastric chemistry which are not without interest. It is true that those clinicians who have studied the character of the gastric secretions in subjects attacked by nervous exhaustion, have arrived at dissimilar results. We must here recall briefly the essential conclusions to which their researches have led.

In the gastro-intestinal atony of neurasthenics, M. Bouveret states that the secretion of the stomach has undergone important qualitative modifications. According to him, the principal fact, or at least the one that can be best appreciated at

present, is diminution, or even total disappearance, of the free hydrochloric acid of the gastric juice at all periods of digestion. "It is even more "common to observe its complete absence than "its simple diminution in those patients who are "true neurasthenics." He adds that this absence of hydrochloric acid is an early feature, since it appears in the first degree of gastro-intestinal atony, and that it is tenacious and resistant to treatment. *Insufficience* or *absence of hydrochloric acid* must then, according to this author, be considered as an important element in atonic dyspepsia. M. Bouveret remarks, however, that patients who present the slight form of this dyspepsia waste little or not at all, in spite of the real disturbance of the chemical functions of the stomach, and he supposes that either the intestinal and pancreatic secretions make up for the deficiencies of the gastric juice, or hydrochloric acid does exist in that fluid, but in such feeble proportions that, directly it is produced, it is masked by the albuminoids of the food or by peptones. In the latter case the process of peptonisation in the stomach would be slowed, but would still be possible.

As to the proportion of pepsine contained in the gastric juice, he holds that it is practically normal.

Finally, the total acidity due to combined organic acids and hydrochloric acid is, he believes, slightly above the physiological average. In the severe

forms of neurasthenic atony, this indicates, as does the development of gas in the stomach during digestion, the existence of abnormal fermentations of the chyme, these fermentations being themselves attributable to the weakened antiseptic power of the gastric juice when it is deprived of free hydrochloric acid.

M. Bouveret has observed excess of hydrochloric acid, and of the gastric secretion generally, in only a very small number of cases; he considers that this is a matter of fortuitous association, and that cases of this class should not be considered as atonic nervous dyspepsia properly so-called (*Traité des maladies de l'estomac*, 1893).

The researches of M. Mathieu have led him to results that differ appreciably from the preceding.

In cases that answer to the slight form of nervo-motor dyspepsia, or to gastro-intestinal atony of the first degree, this author has fairly often observed that digestion is performed under almost normal chemical conditions, that free hydrochloric acid exists, though in slightly smaller proportion than in the physiological state, and that pepsine also is produced in proportions that do not seem to differ much from those of health, in so far at least as one can judge from digestions artificially carried out with filtered gastric juice; and that, finally, the quantity of the organic acids of fermentation is not appreciably increased.

In severe cases, on the other hand, M. Mathieu

observed that there is often a marked diminution in the secretion of hydrochloric acid, the free acid being absent, and the combined acid in small quantities; and that the total acidity is either normal or above normal,according as stasis and fermentation are wanting or are present to a considerable degree. M. Mathieu states, moreover, that hypersecretion of hydrochloric acid may be observed in neurasthenia, and that it is certainly less rare than M. Bouveret believes.

Herzog[1] has published an important paper on this subject. In 14 cases of nervous dyspepsia under the care of Leyden, the author found that the motor functions of the stomach were impaired in 9 and normal in 5. Of the 9 patients in whom the motor functions were impaired, 3 had normal acidity, 1 feeble acidity, and 5 showed either hypersecretion of hydrochloric acid or hyperacidity in general. Among the 5 patients in whom the motor functions were intact, there were 1 case of normal acidity and 4 of hyperacidity. According to this author, then, the disorder of the gastric functions consists most often in impairment of motility with exaggerated secretion and hyperacidity.

The researches of Leyden[2] and Stiller[3] had already shown that, contrary to the opinion of Leube, nervous dyspepsia may provoke serious disorders of the secretion and the motor functions.

[1]Herzog, *Zeitschrift f. Klin. Med.*, Bd., XVIII., 1890.
[2]Leyden, *Berliner Klin. Wochenschr.*, 1885.
[3]Stiller, *Die nervöse Magenkrankheiten*, 1884.

In spite of the divergence of opinion among these different authors, it stands out clearly from the sum-total of their observations, that in practice one must expect to meet among neurasthenics:

1. Dyspeptic conditions corresponding to the slight or the severe form of gastro-intestinal atony, and in which the secretion of hydrochloric acid is either normal or perceptibly diminished. In these cases the motor functions are frequently affected, but most often in a feeble degree only, and it is rare for them to result in stasis with great permanent dilatation, such as M. Bouchard has described.

These are the forms most frequently observed in neurasthenics.

2. Dyspeptic conditions in which hypersecretion and an increase of hydrochloric acid are the dominating features. Now, the exaggerated secretion of hydrochloric acid may, as is well known, show itself under three principal aspects: *a.* a simple exaggeration of the normal secretion at the time of digestion; *b.* permanent continuous hypersecretion of hydrochloric acid; *c.* intermittent attacks of hypersecretion. The last two modes constitute the two forms of Reichmann's disease. Let us briefly recall the clinical characters proper to each of these types of dyspepsia.

Simple increase of hydrochloric acid (simple hyperchlorhydria).—The general condition is satis-

factory. The appetite is usually preserved, and sometimes even exaggerated. Meals provoke gastric crises which appear, not immediately after the ingestion of food, but at the end of two, three or four hours, this being the characteristic feature of this form.

The attack ordinarily begins with a feeling of heat and burning localised at the epigastrium. Then come bitter and acid regurgitations, which cause a disagreeable sensation in the mucous lining of the œsophagus, and produce that peculiar pain behind the sternum which constitutes pyrosis. This may be all, but sometimes to these first feelings of malaise is added a dry state of the buccal mucous membrane, accompanied by a keen thirst. Soon the patient complains of more distressing sensations, of pains that are sometimes shooting but more often constricting, and of "cramps" that radiate towards the hypochondriac regions and the back of the thorax, and in the lower intercostal spaces. Vomiting is absent.

The crisis is more or less painful, and of variable duration; it does not come on inevitably after every meal, and it is after the mid-day meal that it appears most often and is most marked. The majority of patients have only one attack, that of the afternoon. Another important character of the attack of pain is that it is relieved, or even cured, by the ingestion of food rich in albuminoid substances, such as milk or white of egg.

This acid dyspepsia is observed more especially in hereditary neurasthenics, in the descendants of gouty ancestors, or in those who have themselves exhibited symptoms of clearly arthritic nature; these patients are capable of a certain amount of physical activity, and do not usually belong to the category of neurasthenics with marked cerebral depression.

Intermittent form of hypersecretion of hydrochloric acid.—The intermittent form of Reichmann's disease is very rarely met with in neurasthenics. It hardly ever appears except as a passing episode, and under the immediate influence of keen mental anxieties or of intense emotions of a depressing character. In these circumstances it occurs as a momentary complication of simple hypersecretion of hydrochloric acid. Its essential features are the following. The attacks are more or less frequent, being separated by intervals whose duration varies from a few days to several months. They last one or two days, sometimes longer. The crisis ordinarily begins in the morning before the first meal; the patient experiences a feeling of burning at the epigastrium; he has nausea, and vomits some mouthfuls of an acid liquid, which is colourless or greyish or slightly tinted by bile, which contains pepsine and hydrochloric acid, and which actively digests a piece of boiled egg *in vitro*. The vomitings of fluid from the stomach are repeated, and are at first abundant,

but afterwards less copious in accordance with the amount of gastric hypersecretion; the ingestion of liquids provokes them; the stomach is intolerant; the pains are rarely intense, but the thirst is keen and the anorexia absolute. The abdomen is retracted rather than distended. The patient, overwhelmed by his exertions in vomiting, shows a pale face with drawn features; his prostration is great, however short a time the crisis may have lasted. The attack ends either abruptly or gradually.

Continuous Hypersecretion.—In this especially severe form there are absolutely no periods of complete intermission. It fairly often follows on one of the preceding forms. In these cases we find patients who for several years have suffered from the stomach, and whose dyspeptic troubles have often preceded the appearance of the first symptoms of nervous exhaustion. Interrupted at first by longer or shorter periods of improvement, the digestive disorders eventually become permanent, the patient's strength declines, he grows thin, and when the disease has reached its height his aspect is quite like that of a person suffering from cancer of the stomach.

The appetite is maintained, but the patient eats little in order not to arouse his pains; in the morning he does not suffer, but three or four hours after the mid-day meal the first crisis of pain comes on, accompanied by eructations and acid

regurgitations. This crisis lasts one or two hours, till the vomiting of acid fluid from the stomach comes and puts an end to it. A second attack, similar to the first, and often more violent, occurs after the evening meal, towards the middle of the night. The liquid brought up is for the most part composed of gastric juice; it contains pepsine and hydrochloric acid. This permanent hypersecretion is accompanied by stasis of the food and permanent dilatation of the stomach. Thus it can be observed with the aid of the stomach-tube that, in the morning before breakfast, the organ still contains abundant remnants of food, and the liquid drawn off after a test meal shows an increased proportion of free hydrochloric acid.

Such are the different dyspeptic states that may be met with in patients suffering from nervous exhaustion. Must all these forms of indigestion be considered as really belonging to neurasthenia, as proceeding from the intimate disorder of the nervous centres on which the manifestations of this neurosis depend? Must it be thought, as some authors hold, that neurasthenia itself has often its origin, its first cause, in the pathological condition of the stomach? That is a question that we shall discuss later in the chapter on Etiology. What is at present desirable to remember of this rapid outline of the forms assumed by the digestive disorders of neurasthenics, is the very fact of their diversity, and in consequence the necessity

that is imposed on a medical man brought into the presence of a neurasthenic suffering from dyspepsia, of noting the characters of that dyspepsia with precision and care. He will thus be in a position to regulate judiciously the dietetic treatment of his patient.

f. **Cerebral depression (mental state).**—Neurasthenia, being a general disease of the nervous centres, not only deranges the somatic functions, but also disorders the *psychical.* Whatever be the clinical form that it assumes, a peculiar *mental state* always accompanies it, and even constitutes a symptom of the first rank. It often dominates the clinical picture, and dependent on it is a crowd of manifestations which seem at the first glance to be altogether unconnected with it. We cannot present here a complete methodical study of the mental symptoms of neurasthenia; we shall only indicate their principal features, and show the account to which they may be turned from the point of view of the moral treatment suitable to this class of subjects.

These mental disorders may be arranged in two groups, comprising, first, the stable and permanent psychical modifications, which constitute the very foundation of the psychical state of the patients; and secondly, the passing and incidental disorders, which are only in some sort accidental complications

In general terms, there is a conscious weakening of the personality, with a more or less pro-

nounced loss of power in all the faculties, to which are incidentally added fixed ideas and obsessions.

Aboulia, or enfeeblement of the will, is one of the commonest features of the mental state of neurasthenics. The consequences of this psychical disorder are many: in the intellectual sphere it brings on loss of, or diminution in, the power of *attention*; the patients are usually incapable of thinking out a subject, of co-ordinating their ideas with precision, and of directing the course of them. Their thoughts attach themselves to secondary points, to futile details; they sometimes read whole pages without having understood what they have read. When they have applied themselves for some instants to a slightly complicated intellectual work, they all at once become confused; their feeble power of attention is eclipsed as if it were suddenly exhausted. Thus they are seen to break off suddenly in the course of a conversation, and declare they have forgotten what they wished to say, and that their heads feel empty and without ideas. The decay of their will shows itself again by doubts, by interminable hesitations; nothing is more distressing to them than to come to a decision. It is often on the enfeeblement of the will that the motor asthenia depends, still more than on a special debility of the muscles.

The *memory* also is diminished in these patients. Their power of recalling past events is defective, because they are unable to sustain the

effort of attention necessitated by the search for the forgotten incident, and because the greater part of the events that have taken place after the onset of their malady have been perceived by them feebly, and hence are badly associated with their conscious personality. Often beset by some fixed idea, some hypochondriacal preoccupation, they live, so to speak, in a state of perpetual absent-mindedness; this is one of the causes that make them perceive in a vague and uncertain manner the incidents of which they are witnesses. Thus they are unable to recall them to their memory even when they are still recent. Their acts of forgetfulness, then, are frequent; they are connected with the most diverse subjects, and in fact the amnesia of neurasthenics is indiscriminate. Their emotionalism is extreme; everything impresses them, and every emotion is especially distressing to them because they perceive with unusual vividness the diverse sensations produced in their different systems (heart, respiratory system, intestines, etc.) by all emotional states. Consequently they are seen to avoid with care everything that might agitate them. They are timid and fearful, and have lost confidence in themselves. The presence of a stranger among those habitually round them is enough to put them out of countenance; to address any one, or to enter into conversation, involves an effort that many of them shrink from. They neglect their social

duties, deliberately retire into solitude, and declare themselves unable to manage their affairs.

The sufferers are perfectly conscious of their moral deficiencies. The more courageous complain bitterly of them, and deplore, without being able to overcome, the weakness of their will, their memory, and their intellectual faculties. They try their hand at occupations and at subjects of study that seem to them likely to excite their interest and arouse their activity; but they find the attraction of novelty ephemeral. They tire quickly, are seized with distaste for their undertaking, and soon abandon it to pass to other subjects.

It results from this weakening of the personality, from this loosening of the bonds that render stable the synthesis of the *ego*, that these patients are powerless to resist the invasion of certain ideas that obtrude themselves upon their minds and hold for the moment an undivided empire over them. They are suggestionable, and consequently subject to all sorts of fears and obsessions, which come sometimes from themselves, and sometimes from the circumstances in which they happen to be placed. Their constant disorders of common sensation, their feelings of malaise, their digestive and circulatory derangements, the lassitude that overwhelms them, all these unite with their very distinct feeling of mental impotence to keep up a state of depression, and to suggest a crowd of hypochondriacal anxieties.

Hypochondriasis is rarely absent in the case of patients attacked by nervous exhaustion, but it is not so tenacious, so unconscious, nor so systematised as insane hypochondriasis. A neurasthenic who suffers more especially from rachialgia will believe himself to be affected by disease of the spinal cord; this idea will torment and agitate him —but his conviction is not firmly established; he only asks to be reassured, and a few authoritative words will be enough to deliver him from his fear. This same patient may again, some days later, believe that he is attacked by disease of the heart or of the stomach, but his erroneous beliefs will never present the characters of a fixed idea, a systematic delusion. However, the hypochondriacal ideas that a particular symptom may cause to spring up in the minds of these patients, are not always so transient. There are some that come to stay, so to speak, and their continuance sometimes involves serious inconveniences. We have seen neurasthenic women, who, without being in any way paralysed, believed themselves absolutely unable to walk or to stand upright, and ended by never leaving their beds, thus condemning themselves for whole years to a deplorable immobility. It is, again, their mental enfeeblement and their suggestibility that give rise in many neurasthenics to those intermittent obsessions, those systematic fears, those phobias, those states of passing anxiety, that make so vivid an im-

pression on them : agoraphobia, claustrophobia or fear of narrow and closed spaces, anthropophobia or fear of crowds and assemblies, stasophobia (Bouveret) or fear of the upright position, etc., are the commonest forms. All these states of anxiety present identical characters ; every time that the patient happens to be placed in circumstances apt to arouse them, the emotional distress is produced with an irresistible automatic force.

The suggestibility of neurasthenics again explains the influence exerted on their mental condition by the surroundings in which they live. Nothing is more adapted to foment or keep up their moral depression and hypochondriacal anxieties than the assiduous cares, the incessantly renewed inquiries as to their state of health, and the recommendations that are showered on them by their friends.

From this we may gather the nature of the moral treatment suited to these patients, and the beneficial action that may justly be expected from it. These neurasthenics are not always hypnotisable, but they are suggestible ; hence it is by adroit encouragement, by a cheering and sustained suggestive action, that the physician, when he is able to preserve his authority with them and retain their confidence, can combat their cerebral depression successfully, and thus aid powerfully in their cure.

CHAPTER III.

SECONDARY SYMPTOMS.

In addition to the cardinal symptoms or stigmata of neurasthenia that we have just passed in review, there are to be observed, in the majority of cases, functional disorders of secondary rank; these constitute in a way the minor symptoms of the neurosis, but it occasionally happens that some of them take on an unusual development, and impress on the disease a peculiar clinical physiognomy.

a. **Vertigo.**—Vertigo is a frequent symptom in neurasthenia. The attacks are generally short. As it very often coincides with digestive disorders, many clinicians have supposed that it is always of gastric origin. This is doubtless an erroneous interpretation, and Beard and Charcot have rightly protested against it. It is certain that the attacks of vertigo sometimes show themselves peculiarly intense in neurasthenics who present no disorder of the digestive functions; and in the second place it has been remarked that the gravest organic gastropathies are hardly at all complicated by giddiness. It seems very probable, then, that the greater part of the attacks of vertigo that appear

in neurasthenics have a central origin, and depend directly on the disorder of the nervous centres.

These attacks of vertigo occur sometimes before the patient has broken his fast, sometimes after meals ; it is especially in the middle of the discomforts of the dyspeptic crisis that the symptom manifests itself. The intensity of the attack is extremely variable ; sometimes there is nothing beyond a rapid sensation of loss of balance, or movement of the ground, but the attack may be more violent ; the patient feels as if pushed in different directions, the ground seems to rise and fall under him alternately, and he staggers like a drunken man, and has to cling to neighbouring objects to prevent himself from falling. The features of the crisis are sometimes identical with those observed in Ménière's vertigo ; in such cases the patient notices a humming or a shrill whistling at the onset of the attack, then he has a sensation of falling forwards, of being precipitated into a gulf, but the impulse is never so violent as in Ménière's disease, and does not go so far as to make him fall to the ground. This form of neurasthenic vertigo is frequently accompanied by nausea and vomiting ; it disappears after lasting for a few minutes, but leaves the patient in a most distressing state of dejection and agitation. Rotatory vertigo is rarely observed.

Finally, in certain cases, rare it is true, the giddiness of neurasthenics is almost continuous.

The clinical picture is then very similar to that presented by patients suffering from cerebellar vertigo.

b. **Motor disorders.**—We have already, in studying the stigmata of the neurosis, described the enfeeblement of the neuro-muscular system; a certain number of other motor disorders are also to be observed in neurasthenics, namely muscular cramps, fibrillar contractions similar to those seen in persons attacked by progressive muscular atrophy of spinal origin, and functional contractures such as writer's cramp.[1]

Trembling has been noted in nervous exhaustion by Beard and by M. Pitres; it is usually limited to the upper limbs, and is a fine trembling with short rapid oscillations like those of the trembling of exophthalmic goitre.

Paralyses.—Are true motor paralyses to be met with in the course of neurasthenia? We believe, as do others, and notably Ziemssen, that such paralyses do not form part of the clinical picture of pure neurasthenia. Beard, however, observed attacks of paralyses or of paresis in some of his patients. M. Bouveret has noticed incomplete paralysis of very short duration, limited either to one limb or to the two lower limbs, and "occurring in attacks that lasted a few minutes only." We have never met with cases of this class, and we believe that the majority of them are usually com-

[1]There is usually a slight, but real, impairment of co-ordination. —*Trans.*

plicated by hysteria. If these motor paralyses really do exist in pure neurasthenia, they are certainly of extreme rarity.

c. **Disorders of common sensation.**—Perversions of common sensation often occur in neurasthenics, and the most frequent of all is assuredly *hyperæsthesia.* We have already mentioned persistent headache, painful sensibility of the scalp, and rachialgia in its diverse forms. These are the most habitual localisations of the hyperæsthesia, but any part may be affected. Hyperæsthetic zones, even pains of neuralgic type, prickings, shooting sensations recalling the lightning pains of locomotor ataxia, and feelings of burning, appear and disappear turn by turn in the length of the limbs, in the thorax, and in the abdomen (*general neuralgia* of Valleix).

Sometimes the morbid condition of common sensation displays itself by an exquisite sensitiveness to heat and above all to cold. Many patients complain constantly of being cold; they overload themselves with clothes even in the warm season. They are, moreover, strongly affected by external influences, such as atmospheric changes, wind, humidity, storms. Of some of them it has been said with reason that they are veritable living barometers.

The disorders of sensation are also manifested in the form of *paræsthesiæ.* The patients frequently experience feelings of numbness in the

limbs; it seems to them that some segment or other of a limb is "as if dead," or "wooden," or "strangely light," or else as heavy as lead. Perhaps neuro-muscular asthenia is in these patients only the consequence of a feeling of permanent fatigue, or, if the expression be preferred, of a peculiar dysæsthesia of the locomotor system. *Anæsthesia*, in the strict sense of the word, does not exist in pure neurasthenic states, that is in states without admixture of hysteria. If the seats of these various perversions of sensation are explored methodically, they are never found to be anæsthetic.

But, independently of the disorders of superficial sensibility which affect the teguments, neurasthenics exhibit perversions of the sensibility of deep organs which are vague and ill-defined, but none the less very real and very important. Those who live in a state of perfect health never perceive the regular play of their organs; it is not the same with neurasthenics, who are constantly affected by the most diverse internal sensations. The movements of the heart and the arteries, the work of digestion, locomotion, intellectual effort, the complex play of emotional states, all the functions of organic life and the life of relation,[1] give rise in them to vague and changeable, but always distressing, impressions. That

[1]The life of relation comprises the functions subserved by the sense organs, the nervous system, and the voluntary muscles; the systems, that is, that bring a being possessing them into more immediate relation with the outer world.—*Trans.*

is to say their *common sensation* is profoundly disordered. They feel quite strange, quite changed. Thence comes that indefinable feeling of being out of sorts, of which the greater number of these patients complain; thence also without doubt comes, as we shall see later in studying their mental state, their tendency to hypochondria and melancholy.

d. **Disorders of the circulation.**—Disorders of the circulation occur in all neurasthenics, affecting sometimes the heart and sometimes the peripheral vessels. The derangements of the cardiac innervation assert themselves occasionally with such intensity that they mask in some sort all the other symptoms of nervous exhaustion. It is cases of this class that have led some authors to describe a *cardiac form* of neurasthenia. Though less obtrusive, the disorders of the peripheral circulation are none the less very frequent and very real. It is, in fact, to alternations of spasm and dilatation of the arteries and veins, that are due the anæmia and the passing congestions of the skin and mucous membranes commonly observed in these patients; and some authors have thought that it is possible to explain solely by the derangement of vaso-motor innervation the different symptoms that figure in the clinical picture of neurasthenia.[1] We shall return later to

[1]The pseudo-anæmia is not always transient. It is presumably accompanied by congestion in the splanchnic area, and to the superficial anæmia and deep congestion may be due some of the paræsthesiæ observed.—*Trans.*

this vaso-motor theory of nervous exhaustion, which was propounded by Anjel.

Disorders of the heart.—Palpitations.—It is in the form of these last that the disordered cardiac innervation shows itself. The palpitation of neurasthenics occurs in attacks of varying duration and intensity. These attacks have no gravity; but they return frequently, and their reappearances occur under the influence of the most diverse and often the most futile causes: a slight emotion, even a moderate physical effort, or the work of digestion, suffices to provoke them. These palpitations, and the distressing sensations by which they are accompanied, disturb the minds of the patients, who soon believe themselves to be affected with some grave lesion of the heart.

Tachycardia.—The disorder of cardiac innervation may be more profound and more stable, and may manifest itself under the form of permanent acceleration of the rhythm of the heart. This tachycardia of neurasthenics exactly resembles that seen in exophthalmic goitre: the number of pulsations may rise to 120, 130, or even more; the beatings of the heart seem energetic; the patient perceives them distinctly, and the observer's hand, placed on the precordial region, feels a very marked impulse at each beat. The pulsations of the carotids are exaggerated, but the radial pulse on the contrary is small and feeble.[1]

[1] Visible beating of superficial arteries is not infrequently seen in neurasthenia apart from any tachycardia, and probably apart also from arterio-sclerosis; and epigastric pulsation is common.—*Trans.*

It is usually regular; but in certain cases the pulsations are found to be irregular in both force and rate. Want of rhythm, however, has not here the grave significance that it possesses in organic diseases of the heart. This chronic tachycardia may last for months together; it passes successively through phases of aggravation and of remission, but ends by disappearing either spontaneously or under the influence of general treatment directed against the neurasthenic condition. M. Bouveret however holds that the tachycardia with which we are dealing here may present itself in a serious form ending in enfeeblement of the myocardium, dilatation of the cavities of the heart, and death from asystole. The existence of such a form still rests on too small a number of cases to be admitted without opposition. It is in any case extremely rare.

Neurasthenic tachycardia is habitually observed in those cases of nervous exhaustion in which the cerebral depression is profound, and in which intense or persistent digestive disorders have brought on general enfeeblement and wasting.

Slowing of the movements of the heart.— There are, again, other disorders of the functions of the heart that are exhibited by neurasthenics. Slowing of the pulse has been noted: the number of beats may fall to 50 a minute. This slowing of the heart is sometimes accompanied by irregularity; in such a case the pulse is usually

small and compressible. Such a state of persistent slowness with lowering of the arterial tension follows most often on periods of cardiac excitement; it is rarely primary, and an excitement, however slight, or an emotion is usually enough to put an end to the habitual slowness of the pulse and to accelerate for the moment the beatings of the heart. Thus one again finds in the state of the cardiac functions that feebleness and irritability which are the characteristics of functional disorders of neurasthenic origin.

Angina pectoris.—This distressing symptom sometimes shows itself in neurasthenics. But the angor pectoris of neurasthenia, like that of hysteria, belongs to the group of benignant anginas. It is none the less a source of terror and anxiety for the persons attacked by it, and is peculiarly apt to throw them into a state of extreme dejection and depression. It almost always assumes the *vaso-motor* form.

The patient suddenly experiences in the precordial region a feeling as of being gripped, a sensation of constriction, which quickly becomes extremely painful, and radiates immediately into the left shoulder and arm, sometimes even into the lower limb of the same side. He is a prey to anguish, to inexpressible terror. His breathing is short and quick; his face pale and livid; his extremities also are pale, cold, and apparently bloodless. The pulse is small and feeble, and the heart-

beats are almost imperceptible. This phase of the attack probably corresponds to a state of spasm of the peripheral arteries and perhaps of the arteries of the heart.

After a duration often sufficiently long (some minutes, a quarter of an hour on the average), the crisis terminates by an evident change in the state of the circulation. The face becomes red and hot; the energy of the heart-beats increases, their rhythm is first hastened, then slowed, and everything returns into order.

Disorders of the peripheral circulation.—Disordered innervation of the arteries and veins manifests itself by alternations of constriction and dilatation of these vessels. These changes are more or less abrupt; they are sometimes transient and sometimes persistent. Vaso-constrictor irritability declares itself by pallor and coldness of the segments of the body, and by smallness of the pulse. These modifications are usually limited to the extremities of the limbs and to the face. They appear and disappear under the influence of various causes, such as an emotion, anxiety, or a sensation of cold. When the vascular spasm is general and sudden, it may cause intense and prolonged shivering, accompanied by trembling and a considerable fall of the peripheral temperature. The aspect of the patient then exactly resembles that of a sufferer from malaria in the initial shivering stage of the attack.

These vaso-motor crises, by their intensity and their sometimes regular reappearances, have occasionally led physicians astray, and made them believe, in the absence of direct verification, that true febrile attacks were present.

The phenomena of *vaso-dilatation* are not less common. Moreover they frequently alternate with states of constriction of the vessels. Under the influence of very slight excitations there may be seen to appear, in the majority of neurasthenics, blushes of redness disposed in patches or in blotches more or less extended over the face, the chest, or the extremities. This vaso-motor disorder may go so far as to produce œdematous infiltrations which are mobile and transient, usually symmetrical, and limited to the extremities of the lower limbs.

It has been asked—and the question may probably be answered in the affirmative—if similar modifications are not equally produced in the viscera, provoking, according to the organ implicated, one or other of the manifestations observed in neurasthenics; for example, attacks of diarrhœa when the intestine is affected, angina pectoris when the coronary arteries are affected, vertigo, cerebral depression, insomnia, etc., when the brain centres are involved.[1]

e. **Disorders of the sense organs.**—Any of the

[1]Another circulatory symptom is exaggeration of the effect of posture on the pulse-rate, due to lessened vaso-motor control.—*Trans.*

senses may be affected, but more especially sight and hearing.

Sight.—Passing injection of the conjunctiva has been described, accompanied by slight œdema of the eyelids. But the principal ocular disorder consists in a quite special weakening of vision—we refer to the *neurasthenic asthenopia* of American authors. The eye tires quickly. As soon as the patient takes to reading, or to any other occupation requiring a sustained effort of sight, he experiences a painful feeling of tension in the eyeballs, soon followed by confusion of the visual images; however, the transparent media and the membranes of the eye are normal. The correction, with the aid of appropriate glasses, of any disorder of refraction that may exist, does not render the neurasthenic more able to sustain a somewhat prolonged effort of vision, and he is occasionally obliged to restrain, and even to stop, his professional occupations. There is probably here a state of weakness of the muscles of accommodation. Neurasthenic asthenopia is often obstinate; it may come on in attacks of longer or shorter duration, or it may be continuous; it then becomes a cause of despair to the patients, and contributes powerfully to aggravate their cerebral depression.

Narrowing of the field of vision has been described in certain cases of pure neurasthenia (Westphal, Charcot, Pitres), but this symptom is quite exceptional, always transitory and of very

short duration. It appears especially at the moment of attacks of vertigo.

Hearing.—The auditory apparatus may become irritable in the same way as the other sense-organs. One may observe, especially in women, an auditory hyperæsthesia that is truly pathological; they perceive the slightest noises, and those of the street and the house become insupportable to them and cause them genuine torment. In order to escape these discomforts, the patients shut themselves up in their rooms and condemn themselves to veritable seclusion. They hear the beatings of their arteries to such a point as to be disturbed thereby when falling asleep.

Auditory sensations are also produced spontaneously, apart from any external stimulus; the patients complain of suddenly hearing whistlings, hummings, or short sharp sounds resembling detonations.

Taste and *Smell* also in some cases present special perversions or irritability.

f. **Disorders of the genito-urinary organs.**—When neurasthenia follows on a lesion or a functional disturbance of the genital organs, it is accompanied by a series of disorders of the sexual functions, which, by their predominence over the other symptoms, give a peculiar physiognomy to the disease. This form of neurasthenia will be described further on under the name of *genital neurasthenia.*

But apart from this special form, genital and urinary disorders may fairly often be observed in cases of nervous exhaustion proceeding from any other cause, for instance from a traumatic shock, or from intellectual or moral over-pressure. These disorders are of variable intensity, and present the following symptoms: the patients complain of progressive diminution of the sexual appetite, which may go as far as *impotence*, and they are subject to *nocturnal pollutions*. These phenomena may be the starting-point of serious hypochondriacal ideas.

When discussing the etiological theories of neurasthenia, we shall mention the utero-ovarian troubles that may be observed in women, and shall indicate the share taken by those symptoms in the development of neurasthenia itself.

On the part of the urinary functions one meets with varied disorders: many patients are tormented by frequent desire to micturate, others complain of micturating with difficulty. We shall see how great is the influence of auto-suggestion on the appearance and persistence of this class of troubles.

Polyuria, oxaluria, and transient albuminuria have all been noted in the course of neurasthenic conditions. According to Albert Robin,[1] 15 per cent. of neurasthenics have phosphaturia, and 10 per cent. albuminuric phosphaturia. In 10 per

[1]Written communication.

cent. the phosphorus is incompletely oxidised, and there is phosphoruria. A certain number show an increase of the organic salts eliminated, the increase amounting to from 30 to 50 or 60 per cent.; but these in all probability are contingent or secondary phenomena unconnected with the fundamental and primitive symptomatology of the neurosis.[1]

1 It would be remarkable if so frequent a concomitance were accidental. Polyuria is presumably one of the vaso-motor defects, and oxaluria and phosphaturia two of the disorders of metabolism that occur in those predisposed to neurasthenia. (See Introduction). Albuminuria is not easy to explain; Dr. Dukes holds that albuminuria may sometimes be of vaso-motor origin, and its not infrequent occurrence in healthy subjects after cold baths or violent exercise seems to support this view.

Another occasional symptom of neurasthenia is a slight degree of paraphasia, possibly due to enfeeblement of attention. It has also been observed that the blood-pressure in neurasthenics is low, and the reflexes (both tendinous and superficial) exaggerated, that their respiration is often shallow, and that they sometimes suffer from attacks of hemicrania. It will be found, however, that these latter conditions, though doubtless increased during the attack of neurasthenia, were in most cases present in the patient beforehand; they are really symptomatic of the fundamental condition on which neurasthenia is usually developed. (See Introduction).—*Trans.*

CHAPTER IV.

FORMS OF NEURASTHENIA.

The signs of neurasthenia that we have just passed in review may be grouped in different ways, so that the clinical physiognomy of the affection looked at as a whole varies according to the case. The analytical study of the disorders that constitute it does not give a sufficiently precise notion of these differences of aspect, and all authors, from Beard onwards, have felt the necessity, in order to communicate to their descriptions more reality and life, of tracing the picture of the multiple forms that the malady may assume.

Although the semeiological study that we have sketched is only a simple preface to the setting forth of the hygienic measures required for the prophylaxis and treatment of neurasthenia, yet we cannot here neglect the forms of the affection, for some of them at least require special therapeutical treatment and particular rules of hygiene.

Authors hardly agree as to the number and the varieties of these forms. It would be superfluous to recall here the different nomenclatures that

have been drawn up by writers on neurasthenia; we shall only say that the majority have multiplied them to excess.

Among those described are some that hardly deserve more than simple mention in a work like this. We shall indicate them without lingering over them. Such is the *hereditary* form, of early onset, long duration, and tenacious symptoms. Exciting causes do not seem indispensable to its appearance; it manifests itself about puberty, often without appreciable reason, in young people with a heavily-laden morbid heredity, and who have sometimes exhibited in childhood eccentricities of temper, character, and intelligence. In these patients the neurasthenic stigmata are fairly commonly associated with the stigmata of so-called degeneration, scruples, doubts, obsessions, and various impulses.

Such again is the *acute* form (*nervosisme aigu* of Bouchut) which, it is said, develops suddenly under the influence of a powerful exciting cause, such as a violent moral or physical shock, is accompanied by fever, and may end in death. The observations by which it has been sought to support the existence of this type are at present few in number and not sufficiently convincing. In fact nothing, up to the present, authorises us to affirm that there is such a thing as acute neurasthenia; but there is sometimes an *acute stage* at the onset of chronic neurasthenic conditions, characterised by the

sudden and rapid appearance of the different signs of nervous asthenia, which, after a sometimes short duration, grow better only to reappear soon and install themselves permanently.

By the side of the two preceding forms, which are based on the etiology and progress of the disorders, many others have been created that are founded on the localisation of the symptoms and their predominance in one part or another of the nervous system. Of this number are:—the *hemi-neurasthenia* described by Beard and Charcot *(neurasthénie dimidiée)*, in which the persistent headache, the muscular feebleness, and the various disorders of sensation localise themselves in one side of the body, and may, on a cursory examination, give the illusion of organic hemiparesis; *gastric* neurasthenia, with predominance of gastro-intestinal atony; *cardiac* neurasthenia (*cerebro-cardiac neuropathy* of Krishaber), which manifests itself principally by precordial anxiety, attacks of false angina pectoris, palpitations, and rushes of heat to the face; neurasthenia of *neuralgic* form, characterised especially by neuralgias of varied situation; *monosymptomatic* neurasthenia (Pitres), which shows itself by fixed and localised pains, in the tongue *(glossodynia)*, in the breast, in the coccyx, or on certain points of the genital organs (clitoris). These *topoalgias* (P. Blocq) are ordinarily the starting-point of keenly felt hypochondriacal ideas and of obsessions, which throw

the painful phenomenon itself into the background of the clinical picture.

We need not insist longer on the preceding forms, and shall confine ourselves to presenting with some degree of development those that seem to have a more marked individuality and a quite special physiognomy.

These forms group themselves into four:

1. *Cerebro-spinal* neurasthenia (of which cerebral neurasthenia or *cerebrasthenia*, and spinal neurasthenia or *myelasthenia* are only subdivisions);
2. Neurasthenia *of women*;
3. *Genital* neurasthenia;
4. *Traumatic* neurasthenia.

1. **Cerebro-spinal Neurasthenia.**—This does not require a long descripton; for it sums up in itself the most ordinary symptoms of the affection, such as we have already described. It is, in short, both the commonest and the completest form of neurasthenia. In it are found persistent headache, vertigo, insomnia, emotionalism, inaptitude for brain work, rapid fatigue of vision, muscular feebleness, rachialgia, various neuralgic pains, and gastro-intestinal atony, with or without precordial anxiety.

When it is the cerebral manifestations that predominate to the exclusion of the spinal, there is said to be *Cerebrasthenia.* On the other hand, where the headache is slight, brain work still re-

latively easy, and vertigo little marked, whereas pains in the back, sensations of burning along the vertebral column, loss of motor power, rapid fatigue and giving way of the legs, heaviness and pain in the limbs, and digestive troubles dominate the clinical scene, the case is one of *Myelasthenia*.

This is the old *spinal irritability* of authors. There is no need to delay longer over it.

2. **Neurasthenia of Women.**—This deserves to be described separately, for although it borrows, of course, its constituent features from the general plan of neurasthenia, yet it has a special physiognomy, and requires, as will be seen later, a special treatment. It has been best observed and best described by Weir Mitchell; this author has moreover formulated the rules of a rational treatment, of which experience has shown the incontestable efficacy in a large number of cases.

Neurasthenia *of women* represents a separate type, which of course is only observed in women, but which does not comprise all cases of neurasthenia occurring in the female sex.

Its etiology is somewhat special: sometimes it is consecutive to painful disorders of the utero-ovarian apparatus, but more often it is the result of physical, intellectual, or moral over-pressure, and among the circumstances that are liable to bring on this over-pressure, there is one that is often found at the origin of the neurasthenia of

women, whose frequency and importance Weir Mitchell has rightly brought to the front: owing to the regular and continued cares that women, in their quality of natural sick nurses, are often obliged to lavish on those near to them, on their fathers, their husbands, their children, they fall into a state of physical exhaustion, due directly to insufficient nourishment, a confined life, and insomnia; and to this is added the distress caused by continued anxiety about the result of the illness, and sometimes the grief consequent on a fatal termination. Neurasthenia often comes on at the end of these long periods of torment, of apprehension, of sorrow, of over-pressure of the whole being, and not rarely it assumes sufficiently special characters.

The dominant feature of this neurasthenic state is profound discouragement, powerlessness to exert the will, in one word *aboulia*, joined to a degree of *muscular asthenia* that is hardly ever seen except in this form. The patients tire on the slightest effort, and finally they no longer dare walk, either because of the extreme lassitude they feel when erect, or because they suffer from continual vertigo, or because they find the upright position and walking a source of fatigue, uneasiness and distress. Thenceforward they cease to go out and confine themselves to their room, where they pass the days, seated or more often lying, in the most complete idleness. In fact, all activity is painful to them: they cannot read without be-

coming tired, nor listen to a conversation of any length; still less can they write, sew, or apply themselves to any other work. They feel vague diffuse pains, the appetite becomes languishing, the stools infrequent and difficult; sometimes the patients grow thin, but often enough they keep up their flesh, and often have an illusory appearance of relatively good health.

The patient's friends usually intervene to aggravate the evil, either because they believe her disease to be "imaginary," and display doubts on the subject of her sufferings and incapacity which are of a nature to increase her worries and distress, or on the other hand because they show her an ill-regulated sympathy that is no less prejudicial. "There is," says Weir Mitchell, "one fatal "addition to the weight which tends to destroy "women who suffer in the way I have described. "It is the self-sacrificing love and over careful "sympathy of a mother, a sister, or some other "devoted relative. Nothing is more curious, "nothing more sad and pitiful, than these "partnerships between the sick and selfish "and the sound and over-loving. . . . . "The patient has pain—a tender spine for ex-"ample; she is urged to give it rest. She cannot "read; the self-constituted nurse reads to her. "At last light hurts her eyes; the mother or sister "remains shut up with her all day in a darkened "room. A draught of air is supposed to do her

"harm, and the doors and windows are closed." And Weir Mitchell rightly adds: "To cure such "a case you must morally alter as well as physi- "cally amend, and nothing less will answer. The "first step needful is to break up the companion- "ship, and to substitute the firm kindness of a "well-trained hired nurse."[1]

3. **Genital Neurasthenia.**—This is an essentially male form of neurasthenia. Later on, in connection with the theories of the disease, we shall say a few words on the relation that some have tried to establish between the nervous asthenia of women and certain lesions of the uterus or its appendages. The genital neurasthenia that we have to deal with here has nothing to do with the former kind; it is only found in men, and owes to the circumstances in which it arises, and the symptoms by which it manifests itself, a sufficiently special physiognomy. It has been well described by Beard, by Ultzmann, and above all by Krafft-Ebing.

If we are to believe the patients—and authors have echoed too complaisantly their way of looking at the matter—the disorders that constitute it are usually consecutive to sexual excesses, particularly to masturbation during adolescence, sometimes also to excessive coitus. More rarely they follow on more or less permanent affections of the urethra, notably on chronic gonorrhœa.

[1]Weir Mitchell, *Fat and Blood*, 7th ed., pp. 40, 41.

These affections or excesses bring on a state of erethism of the centres presiding over erection and ejaculation, and later a state of atony and inactivity of those centres, to which states the various symptoms of genital neurasthenia are due.

If we look at the matter closely, the exciting causes invoked by the patients seem to us to have much less importance than is attributed to them; very often the excesses of which they accuse themselves do not go beyond the customary average of those of adolescents and adults. It is elsewhere that we must search for the true cause of the disorders that characterise genital neurasthenia; the young people who are affected by it generally exhibit undoubted stigmata of degeneration. Hereditary degenerates or not, these are people in whom one finds signs of congenital debility, transmitted or acquired, of the nervous system: infantile convulsions, nocturnal incontinence of urine up to an age more or less bordering on adolescence, malformation of the ears, insufficient or exaggerated development of the penis or testes, morbid timidity, doubts, scruples. In fact, these patients are often already abnormal mentally before being neurasthenic, and their neurasthenia always bears the stamp of fairly marked cerebral derangement; it is accompanied by a veritable hypochondriacal obsession.

Among the symptoms of which these hypochondriacs complain, genital symptoms naturally hold

the first place: these are—frequent and exhausting nocturnal pollutions, priapism, and speedy ejaculation on contact, preventing the regular and complete accomplishment of sexual connection. At a more advanced stage there is real impotence, which however is more psychical than spinal: the patient may or may not have erections, but in any case the erection either fails altogether to occur, or ceases at the moment of the physiological act. If the disorder is still more marked, emission takes place on the occasion of the slightest stimulus, such as an erotic thought, the sight of a woman, or even light friction or shaking like that produced by riding or by the jolting of a carriage; these emissions, moreover, are not accompanied by any voluptuous sensation. It may even happen that spermatorrhœa is produced without the least erection, when the patient makes a simple effort of micturition or defæcation. In this last case, indeed, it is more often prostatorrhœa than true spermatorrhœa that is present, and the subjects frequently mistake for spermatic fluid what is simply mucus from the prostate and urethra.

These disorders of erection and ejaculation are accompanied by distressing sensations: feelings of burning in the urethral canal, neuralgic pains in the thighs and loins, and the various symptoms of cerebro-spinal neurasthenia, *viz.*, rachialgia, headache, muscular weakness, dyspeptic troubles, attacks of palpitation, and precordial anxiety.

But what gives to the clinical picture a fairly distinctive physiognomy, is the peculiar psychical state of these patients: they are both confused and distressed by their situation, and their faces express at the same time timidity, shame, and despondency. They usually speak little and in a low voice; absorbed by their morbid preoccupations, they neglect all the affairs of life that are unconnected with those preoccupations. It is among them that are recruited some of those self-accusing patients with delusions of persecution, to whom we have drawn attention[1]; despair leads them fairly often to ideas of suicide, and sometimes they even pass from the idea to the act.

4. **Traumatic Neurasthenia.**—Traumatic neurasthenia comprises a form whose individuality is not less marked than those of the neurasthenia of women and genital neurasthenia. Its symptoms are fairly often associated with those of hysteria, constituting traumatic hystero-neurasthenia. To

[1]G. Ballet, *Leçons de clinique médicale.* Paris, 1897. Published by O. Doin.

In the lecture referred to Professor Ballet first mentions the well-known contrast between the mental attitude of melancholics and that of most patients with delusions of persecution: the latter accuse others of being the authors of their misfortunes, and are aggressive and indignant, whereas the former blame themselves and are humble and resigned. He then points out that there is a class of patients with delusions of persecution whose mental attitude resembles that of melancholics; these patients do regard themselves as persecuted by others, but they consider the fault as lying in the first instance with themselves; they are timid and self-depreciatory because they believe that the persecution to which they imagine themselves subjected is due to some lesion or defect or bad habit of their own, usually or always connected with the genital apparatus.—*Trans.*

avoid going beyond the limits of this book, we shall only concern ourselves here with simple neurasthenia.

Some thirty years ago the medical men of England and America (Liddell, Syme, Morris, Savory) took to describing under the name of *Railway Spine* some nervous symptoms of diverse nature that they had observed in the victims of railway accidents. Erichsen attributed these symptoms to superficial lesions of the cord and brain and their envelopes; Westphal and Leyden associated themselves with this point of view.

Some years later, in 1884 and 1885, Oppenheim and Thomsen put forward a different opinion as to the etiology of the symptoms in question: they considered them as simple nervous disorders, but forming by their physiognomy a special clinical entity different from the neuroses that had been described up till then; they gave to this entity the name of *traumatic neurosis*.

However, two American physicians, Walton and Putnam, had brought out clearly the analogy existing between some of the symptoms of this neurosis and those of hysteria as it was then known. Page (1885) had made similar observations. Charcot about this period applied himself to showing that the different disorders described as peculiar manifestations of the traumatic neurosis were after all only those of hysteria or of neurasthenia, sometimes isolated, sometimes associated.

This point of view seems to us indisputable. But Charcot went rather far when, after rightly refusing to traumatic neurasthenia any nosological individuality, he also refused it a clinical individuality. Now it is not correct to say that traumatic neurasthenia cannot be differentiated from neurasthenia due to another cause. In fact, in the majority of cases, as various authors, notably Mm. Brouardel and Vibert, have asserted, it has a fairly distinct physiognomy.

Let us rapidly review its causes and its symptoms.

Traumatic neurasthenia may be the consequence of a purely personal accident; it may declare itself after a fall from a horse or a carriage, after a blow on the head, or a fall from scaffolding. More frequently it is due to catastrophes in which a larger or smaller number of individuals is implicated, as earthquakes or railway accidents. It has long been remarked that the victims who are affected by the malady are not usually those who present the gravest injuries; this is because traumatic neurasthenia is due much less to the physical than to the moral shock, that is to say the emotion and fright occasioned by the accident.

Although the first symptoms may show themselves fairly promptly, yet in general they do not appear till some days and occasionally some weeks after the event that has provoked them. Traumatic neurasthenia owes its characteristic

physiognomy chiefly to the psychical disorders, which are, at least in typical cases, much more marked than in the other forms of neurasthenia.

The physiognomy of the patients expresses both dejection and hebetude. Their walk is slow, embarrassed, or even staggering; they advance with short steps and all in one piece, so to speak, as if the joints of the spinal column and lower limbs had lost their flexibility. Their speech is low, hesitating, sometimes even tremulous. They have great difficulty in fixing their attention: thus they answer questions with a certain difficulty, or at least with a certain slowness, and they complain of not being able to read or to work. Their memory is very sluggish. They are excessively emotional, and often burst into tears as soon as one speaks to them about their complaint and the causes that have produced it. They suffer from violent headache, vertigo and insomnia; when they fall asleep they are tormented by distressing nightmares, in which the mishaps that they underwent in their accident usually fill a large place.

They often complain of sensory troubles, of local pains, numbness, sensations of cold, formication, burning feelings in the limbs; of asthenopia; and of humming in the ears, with or without hyperacousia.

Muscular asthenia is general and well-marked.

As with most neurasthenics, there are disorders

of digestion, but here the gastro-intestinal atony is fairly often complicated with vomiting.

The pulse in many cases is frequent, and at the same time small, and sometimes intermittent. Polyuria and glycosuria may be observed. Genital impotence is usual.

To sum up, one finds in traumatic neurasthenia, combined or not with hysteria, the various symptoms that go to form the clinical picture of nervous asthenia, but generally in a much more marked degree.

Finally, the incapacity for mental effort, the dejection, the aboulia, and the special facies caused by these troubles, give the patient a physiognomy sufficiently distinctive to render traumatic neurasthenia, notwithstanding what may have been said to the contrary, easy to differentiate in most cases and of an indisputable clinical individuality.

CHAPTER V.

THE DISEASES THAT ARE OFTEN CONFOUNDED WITH NEURASTHENIA. NEED OF A PRECISE DIAGNOSIS BEFORE LAYING DOWN A RATIONAL COURSE OF TREATMENT.

The fortunes of the word *Neurasthenia* have been remarkable; not only did it quickly take a place in the medical vocabulary, but it soon became popular. Everybody knows it and makes use of it, and, as in the case of all technical terms that have become public property, it has been applied at random. Just as there is hardly an attack of fever, cold or sore throat which is not ascribed to influenza, so there is no nervous phenomenon that presents itself, which is not, provisionally at least, termed a neurasthenic affection by the patients, their friends, and sometimes even by the doctor.

Thus the scope of neurasthenia would be remarkably wide and varied if one were guided by the disorders that are improperly ascribed to it every day.

Now the confusion of a nosological species with others that more or less resemble it, has the most disastrous consequences in practice. It leads not only to mistakes in prognosis, which alone is bad enough, but also to errors in treatment, which is perhaps more serious.

Hence we have been surprised to see that in a recent work, which in other respects is full of correct and original ideas,[1] Dubois (of Berne), who is a physician of great judgment and experience, reconciles himself to this confusion, and dismisses the endeavour to arrive at a precise diagnosis as a vain, useless and barren labour. "No doubt," he says, "scarlatina and measles "are as much morbid entities as those infective "diseases whose micro-organisms are known and "cultivated. And the same is the case with the "greater number of organic diseases, even when "we are still in the most complete ignorance of "their etiology. But as soon as we enter upon "the region of psychology, this respect for classi-"fication is no longer possible. Though we may "continue to make use of terms that are conse-"crated by usage, to employ analysis, and even to "make new subdivisions after a more precise "study of symptoms, yet we are also compelled to "efface distinctions and make wider generalisa-"tions. If this does not give us a clear view, at

[1] Dubois, *Les psychonévroses et leur traitement moral.* Paris: Masson, 1904.

"any rate it gives us a bird's-eye view from "above."

In order to gain a clear view it is certainly a good thing to look from a higher elevation; one can thus appreciate better the reciprocal relations of things; but we must take care not to let our balloon mount to heights from which details cannot be distinguished, for then everything becomes jumbled and confused; there is an effacing of fundamental dissimilarities between diseases, on which dissimilarities depend differences of prognosis and evolution of the highest importance. Thus one is reduced to a symptomatic treatment which is hardly better than quackery. It is not for the simple satisfaction of "supplying our patients with a name derived from Greek" or elsewhere, that the need has been felt of giving a name to diseases, after having separated them from one another by a long and laborious work of observation. These names are not the simple fantasies of philologists; each of them, on condition that they are applied to well characterised entities, implies a course, an evolution, a prognosis, and a treatment which differ from the course, evolution, prognosis, and treatment of neighbouring entities, and I am surprised that Dubois should seem to suppose the contrary. One example will enable me to show the importance of this question of nomenclature. In 1885 Lange (of Copenhagen) described under the name of

"periodic depression" an affection characterised by intermittent and recurrent attacks of depression. Lange failed to observe that this affection was only one of the forms of the disease discovered more than fifty years ago by Falret and Baillarger, and by them named *folie circulaire* or *folie à double forme* (circular insanity). His mistake was excusable at that time; to-day it would no longer be so, after the many works that have been written on the periodical psychoses, both in France and abroad, especially in Germany. Now the term invented by Lange has led some persons astray; they have believed in the existence of a special disease, though the name referred only to a special form of a known disease. M. Dubois himself, I am surprised to find, appears to be one of these persons; and though all psychiatrists, apart from the question of degree, connect the various forms of periodical psychoses with one another, and recognise the identity of their essential symptoms, yet he fails to recognise this identity, and considers the attacks of intermittent depression to be acute attacks of neurasthenia. This is all the more astonishing because the resemblances between neurasthenia and intermittent melancholia are very few and very superficial, if indeed they exist at all, and on the other hand there are radical differences between them in their clinical appearance, their etiology, and their course.

M. Dubois may ask what it matters from the practical point of view. It matters much: the difference in the course of the two complaints causes the prognosis to be very different, and the treatment also. So far as I know, neither psychotherapy in any of its forms, nor any other mode of treatment, has ever shortened by one hour the duration of even the slightest attack of "periodic depression," any more than that of the most marked attack of circular insanity. M. Dubois seems to me to hold, mistakenly, the contrary opinion. I am sure that he would not have fallen into this error if he had had less disdain for the classification of diseases and the nomenclature it requires, had looked from a less elevated stand-point at the malady Lange thought he had discovered, and had seen it in its proper position.

No, distinctions are not useless and vain, and I can only suppose that what M. Dubois wrote went further than what he really thought. Like all neurologists, among whom he holds a very honourable place, he must have seen the practical disadvantage of diagnoses that are superficial, erroneous, or incomplete.

In dealing with neuroses and psychoses, indeed, one is liable to make the most incorrect prognosis and to employ the most deplorably empiric and barren lines of treatment, if one does not make an exact diagnosis beforehand. The time

has passed when medical men contented themselves with describing all patients attacked by nervous disorders as *neurotic*, and the progress which clinical observation has brought about in nosology in this matter cannot be ignored or disdained by physicians worthy of the name, under the pretext—which has always been that of the ignorant—that they are practical in their aim.

Out of ten patients who present themselves to a neurologist as suffering from neurasthenia, fully half are affected by some quite different complaint; and the physician's first task must be to rectify the erroneous diagnosis which has usually been made by the patient himself or his friends, but sometimes also by a brother medical man who takes "bird's-eye views" and disdains nosological distinctions.

If we were to draw up here a detailed schedule of all the maladies that are improperly described as neurasthenia at one stage or other of their course, we should have to review almost the whole field of nervous diseases. Moreover, a chapter on differential diagnosis is of necessity always summary, insufficient, and in some respects artificial. We prefer to point out here simply and briefly those mistakes that are commonest, and therefore principally to be guarded against.

It is not often that simple neurasthenic disorders are taken for the symptoms of a *lesion* of the

nervous system, or inversely. Nevertheless the error is possible in certain cases, and sometimes even excusable.

We will mention the most frequent.

It often happens that a patient who has had syphilis suffers from fatigue, some derangements of digestion, attacks of vertigo, various topoalgias, in short some of the symptoms of nervous asthenia, and in consequence believes himself to be attacked by *locomotor ataxy*. The mistake, or, if one prefers the expression, the fear, is particularly common among medical men; the phobia of ataxia is especially a medical phobia, though far from being exclusively so. In such a case it must be remembered that tabes is characterised not only by subjective symptoms, but also by objective signs of the greatest importance: Westphal's sign (abolition of the knee-jerks); Argyll-Robertson's sign (absence of the pupillary reaction to light with preservation of the reaction to accommodation); Romberg's sign (oscillation when the patient stands up and shuts his eyes); urinary disorders (retention or incontinence); and genital disorders (impotence and frigidity).

The fear of *general paralysis* is also very common among depressed syphilitics, who are exhausted by worries, and whose apprehensions as to the possible results of the infection are not the least of the causes. As a rule, the diagnosis in these cases is easy: it is shown by absence

of spinal symptoms (lightning pains, exaggeration or absence of knee-jerks, urinary disorders, genital disorders), of bulbar symptoms (hesitating speech, trembling of the tongue and lips), of eye symptoms (inequality of the pupils, Argyll-Robertson's symptom, motor pareses of the eyes), and of cortical symptoms (distinct failure of memory, obvious to others, alterations in the character, irritability).

It must not be forgotten, however, that some cases of general paralysis begin by symptoms recalling those of neurasthenia, that in these cases the symptoms remain subjective for a long time, even for several years, as I have shown[1], and that in the absence of objective or decisive signs, the diagnosis remains doubtful and uncertain. I have lately insisted on certain peculiarities which enable these false preparalytic neurasthenias to be distinguished from true neurasthenia (rapid variations in the symptoms from one day to another, curious nature of some of the sensations complained of by the patients, abnormal intensity of some of those sensations, etc.) If one is still in doubt, it is now possible to clear up the matter by having resource to *lumbar puncture*, as it has been shown that, as a rule, lymphocytosis of the cerebro-spinal fluid, which is absent in neurasthenics, is present more or less abundantly in general paralysis as well as tabes.

[1]G. Ballet, *La période prodromique à forme neurasthénique dans la paralysie générale*, in *Leçons de cliniques*. Paris : O. Doin, 1897.

It is needless to draw attention to the possible confusion between neurasthenia and cerebral tumours. This confusion never lasts long. Even when the early symptoms are such as to excuse it, it is promptly cleared up as a rule by the intensity of the headache, the vomitings, and the lesions of the papilla that occur in the case of neoplasms.

Neurastheniform disorders, such as persistent headache, vertigo, dyspepsia, lassitude, and slight mental depression, are sometimes merely a secondary manifestation of an underlying organic condition—disease of the kidneys, liver or heart, increase of arterial tension, arthritic auto-intoxication, or intoxication of external origin. One has to remember them to understand the importance of a thorough physical examination in the case of every patient suspected of neurasthenia; without such an examination one would be liable to overlook the various disorders with which the nervous condition is closely connected, and to which, in consequence, the treatment must be subordinated.

But the most frequent errors of diagnosis are not those which consist in mistaking lesions of the brain and cord or of the viscera for simple nervous disorders; the most common are the result of the confusion which still reigns in the minds of many medical men on the subject of the various neuroses and psychoses. As the distinctive features of these latter are still insufficiently

known, the situation is simplified by jumbling them all together under the same *caput mortuum*. Nowadays one hardly dares say simply "nervous disorders," as formerly; one says "neurasthenia"; it is more fashionable, but neither more precise nor more correct.

It is not possible, in a book like this, to dwell upon the characters and the clinical features of the various disorders which are improperly ascribed to neurasthenia; we should have to go over almost the whole nosology of the neuroses and psychoses. I will limit myself to noticing those classes of patients who appear most frequently before the neurologist, and whom one must carefully avoid considering as suffering simply from nervous asthenia.

If we consider them merely from the point of view of the symptoms that dominate the situation, we may class the patients into four groups:

1. *The asthenic.*
2. *Those with scruples, doubts and phobias.*
3. *The melancholic.*
4. *The hypochondriacal.*

Each of these groups itself includes very different diseases, for the classification we have given is purely symptomatic and not nosological. Consequently the physician's first object must be to recognise to which of these four groups the patient belongs, and then, after having clearly determined the dominating symptom, to connect

it with the neurosis or psychosis on which it depends.

1. The *asthenic* is the patient who is the subject of this book. In his case the characteristic phenomena are those which have been described above—persistent headache, rachialgia, inaptitude for work, amyosthenia, gastro-intestinal atony—all of which phenomena are expressive of nervous exhaustion. On this basis of feebleness are often grafted some of the symptoms of the other groups—scruples, doubts, phobias, depression resembling that of melancholics, hypochondriacal obsessions of the mind. But with a little attention, and a little of the habit of observation in nervous diseases, one can soon convince oneself that these phenomena are accessory and secondary, and that their prognosis and treatment are strictly subordinated to the prognosis and treatment of neurasthenia itself.

The state of fatigue and cerebral exhaustion that is more or less marked in neurasthenics, predisposes them not only to doubts, phobias, melancholy, and hypochondriacal obsessions, but also to every form of auto-suggestion. That is why symptoms of hysteria are so frequently found associated with neurasthenic phenomena *(hystero-neurasthenia)*. This association is the rule in the traumatic form of neurasthenia.

2. Those with *scruples*, *doubts* and *phobias* differ profoundly from the neurasthenic. In them

the manifestations are no longer those of nervous exhaustion; they have a particular form of loss of brain power—the loss of power to attain a feeling of certainty. For at bottom, below the various symptoms that we are considering, there is always a doubt: a doubt of any form, constituting the *maladie du doute* properly so called; a doubt in the domain of morals, constituting a scruple; a doubt as to the possible harmfulness of an object or an act, constituting a phobia.[1]

We have stated above that doubt may be an accidental concomitant of neurasthenia. But when it depends on the latter, and forms a secondary symptom of it, it is as a rule slightly marked, transient, and easily curable. On other occasions, however, it is doubt that occupies the foremost place in the clinical

[1]There seems to be some confusion due to the double meaning of the word *doubt*. Sometimes it refers to a condition of the will, and is opposed to confidence or decision; at other times it is opposed to certainty, and refers to a condition of the intellect. In the expression *maladie du doute* it is evidently used in the former sense, for there is not necessarily any intellectual derangement; even when the difficulty consists in coming to a definite conclusion on a purely intellectual question, the fault lies with a disordered will, which hinders the two sides of the question from being presented together and weighed against each other (see p. 122, lines 3 and 2 from bottom). In the text here, however, the author appears to use the word doubt in its intellectual connotation.

The word *phobia* also seems to be used in two senses. No doubt certain sufferers from the *maladie du doute* show a degree of timidity to which the term phobia may be applied; Prof. Ballet's hypochondriacal phobias (p. 121) seem to be phobias of such a nature, associated with hypochondriasis minor. But this timidity is very different from the phobias in which, when the suitable conditions arise, the patient is seized with sudden terror and precordial anxiety, a state in which doubt finds no place whatever. Of course there may be cases in which the *maladie du doute* is associated with true phobias.—*Trans.*

picture, and is complicated by secondary phenomena of loss of brain-power. These phenomena (moral incompleteness, loss of the sense of reality, etc.), which have been well studied by P. Janet,[1] are complications of the grave and inveterate form of the *maladie du doute.* Janet has proposed to employ the term *Psychasthenia* to denote the sum-total of the symptoms from which these patients suffer. In our opinion it is a pity to change the meaning of the word in this way; as used at present, it serves to denote the mental fatigue and the inability for brain work of simple neurasthenics. It is not a wide enough term for the strongly marked border-land cases that Janet had in view.

However this be, the doubter, such as the neurologist sees him every day, differs greatly from the neurasthenic, both in the symptoms he complains of, and in the course and the usual evolution of those symptoms. He is above all a psychopath, such as were lately classed, rightly or wrongly, in the somewhat confused group of degenerates; in his case, apart from exceptions, one does not observe any of the characteristic symptoms of nervous asthenia—persistent headache, rachialgia, gastro-intestinal atony, or amyosthenia. If these disorders do happen to be present, they constitute associated phenomena which have nothing to do with the essential mental state of

[1] P. Janet, *Les obsessions et la psychasthénie.* Paris: Alcan, 1903.

the patient; unless the doubts themselves are those secondary doubts that sometimes complicate neurasthenia, in which case they are slightly marked and fairly easily curable. Moreover, the evolution of the symptoms shown by the doubter is different from that of neurasthenic disorders. The latter have a certain continuity, and, if once cured, they may not reappear if the causes to which they were originally due are not reproduced. On the other hand scruples, doubts, and phobias, except when they have the continuity and persistence that is only seen in the severest forms, occur intermittently, in attacks that last a longer or a shorter time; in the intervals of these attacks the patients, though no doubt they continue to be hesitating, do not suffer from the throes of distress that are present during the paroxysms. Psychotherapy by persuasion, which renders such services in neurasthenia, and suggestion, which is so useful in hysteria, have very little scope here. This is natural, as neither are the troubles due to auto-suggestion, nor are they simply morbid habits, but they consist of a constitutional state of cerebral imperfection.

3. The *melancholic* is daily taken for a neurasthenic. The error is all the more surprising, as it is easy to see the features in which the two differ, whereas one would search in vain for a point of resemblance. The melancholic condition, whatever be its nature, is made up of disorders of

which some are constant and fundamental, the others secondary and inconstant, though usual. The primitive and constant phenomenon is an *emotional* disorder; it is a more or less clearly conscious state of prostration and powerlessness, and consequently of despondency and distress. This affection of the emotional side of the mind results in sluggishness of the intellect, partial or complete inertia of the will, slowness in the movements, and aboulia. The accessory disorders are the consequence of the subconscious operations of the patient's mind in its endeavour to interpret the modifications in its emotions; they consist of *false ideas* of unworthiness, guilt or ruin, or, more rarely, of hypochondriacal notions. There is a complete contrast with neurasthenia. And this contrast is still more marked if one looks at the course of the disease. Melancholia proceeds by attacks, short or long, which may begin suddenly and end in the same way, and with inevitable recurrences at longer or shorter intervals, at least in what is much the commonest form, intermittent melancholia.

The diagnosis is all the more indispensable, as the treatment of melancholia differs altogether from that of neurasthenia.

4. *Hypochondria* is often spoken of; the word is sometimes used wrongly, and almost always without a clear conception of the nature of the condition it denotes.

Hypochondria is not a disease; it is a symptom, and its clinical and nosological significance vary according to the form it assumes. It consists in "a state of worry, clearly exaggerated or even unfounded, about the bodily health."[1] There was a time when neurasthenics were mistaken for hypochondriacs; they were too readily taken to be *malades imaginaires*. The descriptions of the complaint given by Beard and those who followed him, showed how erroneous this conception was. Nowadays we find that, by the usual swing of the pendulum, some authors seem to have a tendency to return to the former point of view: for them neurasthenia has again become a disease of the imagination, since, in accordance with the tendency to which I have alluded, its symptoms are supposed to be images of suffering or discomfort fixed in the mind by habit, and devoid of any real physical cause. We have elsewhere given our opinion on this point. Neurasthenia, whatever be its etiology, consists in a state of nervous exhaustion; now nervous exhaustion is something real, which can be appreciated and even measured. It is this exhaustion, the essential constituent element of the affection, to which treatment must primarily and principally be directed. On this stock, however, defective ways of feeling and reacting readily come to be grafted, and also fixed

[1] Pierre Roy. *De l'hypochondrie. Etude pathogénique et nosologique.* (Report presented to the Congress of Alienists and Neurologists of France, Rennes, 1905).

ideas that are erroneous and false; and it is thus that hypochondriacal notions may be associated with neurasthenia as a complication. But, just as in the case of scruples and doubts, they are only a complication or a consequence when they do appear. Moreover they are closely akin to scruples and doubts in nature if not in form.

The hypochondria of the neurasthenic, which I have proposed to call *hypochondriasis minor* in opposition to *fixed hypochondriacal phobias* and to *hypochondriasis major*, consists not so much of a genuine false conviction as of an apprehension or fear; the mind does not affirm, but, in a certain measure, it doubts. It is a sort of phobia, but one analogous to the other neurasthenic phobias, less persistently harassing, less distressing at least, than those that are observed in true doubters. The neurasthenic hypochondriac is amenable to reason; he readily lets himself be convinced by arguments, when they are well put before him, and if it is sometimes difficult to cure his painful and unpleasant sensations by moral suasion, it is usually easy to dissipate, for a time at least, the erroneous and harassing ideas to which those sensations have given rise.

Near the patient suffering from neurasthenic hypochondria (hypochondriasis minor) must be classed the man whose morbid apprehension is a simple form of the *maladie du doute.* These

hypochondriacs, whose fear assumes proportions equal to those of the most distressing of obsessions, are legion. They are usually regarded as neurasthenics, as *malades imaginaires*, or even as persons wandering in their minds. It is not observed that these are sufferers from simple phobia, whose phobia is connected with anxieties about their health, just as it might have been connected with any other subject, with contact for example. The fundamental symptomatology here is the same as in all other kinds of phobias: *doubt-fear* (relating to health in this particular case), *obsession* by this doubt, and consecutive *distress*; and the progress of the affection, by paroxysms, is identical with that of the other forms of the *maladie du doute*. Reasoning and suasion have little effect on hypochondriacs of this class. The fact is that there is no need to convince them that they are deceiving themselves; they know it as well as their doctors do. It is rarely that they are under any delusion as to the groundlessness of their apprehensions; they suffer from their besetting fear though they are quite aware that it is unfounded; they are disturbed by it just as we sometimes are in ordinary life at the thought of a danger that we know to be chimerical. It is not that their knowledge is affected, but that their minds are undecided; they suffer from hypochondriasis, just as others, who are

fundamentally identical with them, suffer from scruples.

Quite different is the hypochondriac of the third group, with whom I have still to deal. This one has true delusions, whether his morbid idea is free from absurdity in itself (*e.g.* the conviction that he has cancer of the stomach), or on the other hand is obviously absurd at first sight (*e.g.* the conviction of having a serpent in the intestines). He is not simply apprehensive, like the first kind of hypochondriac, nor a doubter beset by a phobia, like the second ; he is convinced ; fear has given place to a decided belief, a *fixed idea*. There is a true partial disorder of the intellect, and the features that determine its symptomatological importance, its significance as regards diagnosis and prognosis, and finally the therapeutic indications depending on these, are the same as in other partial disorders of the intellect.

5. In these last years there has been described[1], as an independent neurosis, an affection whose place in nosology is still under dispute, but whose clinical features are sufficiently special to necessitate a few words on the subject. As a matter of fact it is often called simply neurasthenia, like so many other nervous disorders that have nothing to do with neurasthenia. We refer

[1] Freud, *Neurol. Centralblatt*, 1895 ; Hartenberg, *La névrose d'angoisse* (Paris : Alcan, 1901), and *Presse Medicale*, Nov. 1906.

to the *neurosis of anxiety*[1]. Whatever be the points of relationship that connect the neurosis of anxiety with neurasthenia, with obsessions, or even with melancholia[2], its clinical appearance is typical enough. The patients show, whether in a marked degree or not, a basis of neurasthenia resulting from disappointment (usually, if not always, sorrows or vexations arising from love affairs), with a diffuse and vague state of disquiet, continuous apprehensiveness, and paroxysms of anxiety that occur chiefly in the morning. This state of continuous insecurity, as Brissaud says, together with intermittent attacks of anxiety, gives the complaint an altogether special physiognomy, which distinguishes it clearly from common neurasthenia, in symptoms at least, if not in nosology. It is all the more important not to confuse the two, as the neurosis of anxiety requires a special line of treatment, that of all the great states of anxiety.

This rapid review of the conditions that are daily and very improperly taken for simple neurasthenia will have been insufficient to give a complete notion of their characters, their varied

[1] "*Névrose d'angoisse.*" In the original this is followed by a sentence distinguishing between the French words *angoisse* and *anxiété*, and suggesting that *névrose d'anxiété* would be a better name for the affection than *névrose d'angoisse*. The sentence is as follows: "It would be better to call this *névrose d'anxiété*, if it were agreed, as Brissaud justly proposes, to distinguish *angoisse*, a physical disorder characterized by a sense of constriction and suffocation, from *anxiété*, which is a psychical disorder that manifests itself by an indefinable feeling of insecurity."—*Trans.*

[2] On this subject see the report of the Congress of Alienists and Neurologists, held at Grenoble, 1902. (Published by Masson.)

forms, and their nature. Perhaps, however, it has indicated the characteristic features of each of them enough, at least, to bring out clearly the importance of an exact diagnosis, when one has to deal with what seems to be simple neurasthenia. Good hygiene and therapeutics cannot be had without such diagnosis.

PART IV.

PATHOGENY.

We propose to examine in this chapter the theories that have been put forward with a view to throwing light on the etiology of neurasthenia. None of these theories seems to us applicable to the sum-total of the facts; but each of them contains a part of the truth and, consequently, a valuable indication for the prophylactic or therapeutic treatment of the affection.

a. Gastric Theories.—Physicians have at all times striven to subordinate neuroses in general, and consequently the different symptoms of neurasthenia, to some lesion or functional disorder of the stomach or of the other abdominal viscera. In these pathogenic conceptions it is sometimes a peccant humour engendered by the unhealthy stomach, spleen, or liver, sometimes a vague nervous influence, a reflex action, that serves as intermediary between the organ primarily attacked and the nervous system secondarily affected. Thus Galen with his *atrabilis*, and van Helmont with his *archæus*, were only the remote forerunners of Broussais and Beau, in sustaining

that neuropathic states had either *gastritis* or *dyspepsia* for their origin. Our epoch has seen the reappearance of analogous pathogenic systems, founded this time, however, on more precise observations, resulting from a relatively perfected technique. The most important of these modern theories, which ascribe the origin of neurasthenic conditions to disorders of the gastric functions, is that which has been upheld by Professor Bouchard.

1. *Theory of Auto-intoxication.*—The doctrine of M. Bouchard is as follows: under the influence of various causes, and in virtue of hereditary or congenital weakness of the muscular walls of the stomach, this organ contracts insufficiently in the intervals between different periods of digestion. The digestive fluids (saliva, mucus, and gastric juice), mingled with remnants of food, tend to remain in it, to ferment, and to putrefy, all the more so that the gastric juice no longer contains hydrochloric acid in sufficient proportion to resist the action of the ferments.

These abnormal fermentations continually produce soluble toxins which, when re-absorbed, go to impair in varying degrees the anatomical elements of the different organs, and notably the nervous centres. Among the morbid phenomena that, according to M. Bouchard, depend on the condition of the stomach, figure indeed all the major symptoms of neurasthenia: fatigue, a

feeling of exhaustion as soon as the patient wakes, headache, inaptitude for work, vertigo, laborious digestion, accompanied by general and local malaise, etc.

Criticisms of this theory have not been wanting. First of all, it has been remarked that dilatation and gastric stasis are absent in a great many cases; in the second place, it is certain that there are neurasthenics who have never exhibited any disorder of the digestive functions. It has certainly been said that dilatation of the stomach may show no symptoms, and may subsist in a latent state without concomitant manifestation of dyspepsia; but exploration by means of the stomach-tube has enabled the absence of any gastric stasis to be directly verified in a crowd of cases. On the other hand, the absence or deficiency of hydrochloric acid, which constitutes one of the essential elements of this pathogenic doctrine, is frequently wanting in dyspeptic conditions, and we have seen that it is not rare to encounter excessive secretion of hydrochloric acid. Finally, it has been said, if the nervous disorders of neurasthenia are the effect of auto-intoxication from the stomach, how comes it that subjects affected by great gastric dilatation, due, for example, to stenosis of the pylorus, and accompanied by permanent stasis, never present the series of nervous symptoms attributed to gastric dilatation? These objections are evidently

sufficient to prove that the theory of gastric dilatation and auto-intoxication, though applicable perhaps to some cases of nervous exhaustion, is not so to all.

2. *Theory of the Vitiation of Nutrition by Dyspeptic States.*—Mm. Hayem and Winter have lately taken up again the theory formerly defended by Beau: they suppose that dyspepsia, whatever may have been its exciting cause, and whether it be accompanied by gastric dilatation or not, brings on in the long run anæmia of the patients, with a general disturbance of the nutrition of their tissues and of their nerve elements in particular. In their studies on the pathological chemistry of the stomach, these authors attribute the general disorders that follow on dyspeptic conditions to albuminoid products derived from qualitative modifications undergone by the gastric digestion, much more than to toxins engendered by fermentation. Gastropathies, whose origin often goes back as far as infancy or adolescence, supply the tissues with nutritive products of vicious composition, and thus lead to various disorders of nutrition, and doubtless also, in a certain number of cases, to minute alterations of the nerve centres which give rise to the symptoms of nervous exhaustion. This conception being admitted, can it serve as basis for a pathogenic interpretation of neurasthenic states *in general?* We do not think so, for the following reasons:

there are undoubtedly neurasthenics who, whatever be the frequency of dyspeptic troubles in other patients of this class, do not exhibit any abnormality or disorder of their digestive functions. We might easily bring forward examples of hereditary neurasthenia, or of pure cerebrasthenia, in which the general nutrition and the gastric functions have not undergone any perceptible damage. And then cases are frequent in which a violent and sudden emotion, a traumatic shock, or some other cause, has provoked the rapid and *simultaneous* appearance of the digestive disorders and the other neurasthenic symptoms. In cases like this, where the development of the dyspeptic condition and the appearance of the various manifestations of the neurosis have been contemporary, the genesis of the whole neurasthenic group of symptoms cannot be due to the disorder of the digestive functions only. Having made these reservations, we must recognise that dyspepsia sometimes precedes the neurasthenic state; in such cases the gastro-intestinal origin of the nervous exhaustion is at least probable. In fact, one meets with patients who, before they became neurasthenic, had suffered from their stomachs for months or even years. Whether they were primarily attacked by atonic dyspepsia with diminished secretion of hydrochloric acid, or by dyspepsia with hyperacidity, accompanied or not by hypersecretion of the gastric juice, they

grew thin and lost their strength; their general nutrition was seriously impaired. When, after a longer or shorter period, during which the digestive disorders alone filled the scene, one sees the customary train of neurasthenic symptoms appear in these patients, nothing is more legitimate than to impute the development of the neurosis to the disorder of the digestive functions. But here again we may ask if it is really by vitiating the nutrition of the elements of the nerve-centres that the dyspepsia has engendered the neuropathic state. Must we not also take into consideration, in cases of this class, the depressing influence always exerted on the moral state of the patients by a gastric affection rebellious to the most diverse modes of treatment, a distressing and irritating source of incessant discomforts and disquietude? In whatever manner the reaction of the gastro-intestinal disorder on the nervous centres be interpreted, it is none the less true that the dyspeptic state must here be considered as the principal factor in the production of the disease.

In short, the relations between dyspeptic states and neurasthenia may, we think, be summed up as follows: in the majority of patients suffering from nervous exhaustion the dyspepsia has merely the value of a symptom, but of an important symptom, since it may contribute largely to keeping up the neuropathic state. In certain cases,

however, the disorder of the digestive functions has been the primary cause of the development of the neurasthenia; and it is against it that the treatment must principally be directed.

3. *Ptosis of the Abdominal Viscera.*—M. Glénard has tried to explain both dyspepsia and the neurotic state, which comprises the greater number of the neurasthenic symptoms, by a sinking of the viscera in the abdominal cavity. But later researches have led this author to attribute to an ill-determined derangement of the hepatic functions the group of dyspeptic and neuropathic phenomena that he observed in his patients (*hepatic neurasthenia* of Glénard and F. Lagrange).

It is certain that enteroptosis exists in some neurasthenics, but it is also incontestable that this symptom is absent in the majority of them. Moreover, M. Glénard recognises that the neuropathic group of symptoms that he has in view is not neurasthenia as defined by Beard and the authors who have described it since. It is true that ptosis of the abdominal viscera may be accompanied by nervous troubles; but it is evident that it cannot serve as the basis of a pathogenic theory of neurasthenia.

b. Genital Theory. — When describing the genital form of neurasthenia, we saw that utero-ovarian affections in women, and in men onanism, excessive sexual connection, and venereal diseases, might be the starting point or exciting

cause of a well-marked neurasthenic state. But it is clear that organic lesions and functional disorders of the genital system do not exert any specific action on the nervous centres. Their value is only that of one powerful factor of nervous exhaustion among so many other factors, and nothing more. If they are frequently found at the origin of neurasthenic states, it is because they act with peculiar intensity on the moral condition of the patients by the gloomy ideas, the disquietude, and the fears that they keep up.

c. Vaso-motor Theory.—Anjel was struck by the frequent occurrence of vaso-motor disorders in neurasthenics, and made an attentive study of them.[1] By means of the plethysmograph he showed that in these patients the vaso-motor system is more excitable and more readily exhausted than in normal subjects. If Mosso's apparatus be applied to the arm of a normal individual, and the patient be then asked to perform some intellectual work (reading or calculation), it is observed that the volume of the arm immediately lessens; this is due to contraction of the arteries. This state of spasm continues as long as the cerebral activity lasts, and comes rapidly to an end as soon as the brain ceases work. If the experiment be again tried, this time on a neurasthenic subject, it is seen that the initial vascular spasm is produced with very great

[1]Anjel, *Archiv. für Psych*, viii., 2.

facility and rapidity, but that the volume of the arm does not remain stationary during the continuance of intellectual work; at the end of some instants it increases, then diminishes again, and thus it exhibits a series of oscillations in different directions. When the brain work has come to an end, these changes still continue for some time; the arteries do not at once resume their habitual tone, as always happens in a healthy subject.

The vaso-motor system of the neurasthenic reacts, then, under the slightest causes; it is irritable and feeble both together, since, when the stimulus is withdrawn, the arterial tonus is re-established more slowly than is normal. Anjel has further observed that causes apt to stimulate the vaso-motor innervation, meals and the ingestion of stimulating liquids for example, lessen this instability, and that on the other hand the instability is increased if the patient be fasting.

Although they are of a rather different nature, the experiments of Weber[1] corroborate the facts observed by Anjel. This author, relying on a group of data furnished both by clinical observation and by experiment, held that the hyperæsthesiæ, the dysæsthesiæ, the paræsthesiæ, the attacks of vertigo, in a word almost all the symptoms of nervous exhaustion, were due to vaso-motor disorders, to alternations of spasm and congestion brought about in the nervous centres

[1] Weber, *Boston Med. Journal*, 1888.

under the influence of the slightest causes. He proposed therefore to define neurasthenia as a *vaso-motor neurosis.*

But, supposing Anjel's opinion to be in conformity with the facts, it is evident that his conception throws light only on the pathological physiology of the functional disorders of neurasthenia and not on the etiology of the disease itself. It merely states the problem under a new form, and does not tell us what is the precise reason of this disorder of vaso-motor innervation and how it happens to be brought about by so many and such diverse causes.

To sum up, none of the pathogenic theories that we have just indicated is altogether satisfactory. These theories leave totally unaffected the conception that is most generally held to-day, namely that nervous exhaustion has its source in a modification of all the nerve centres. In what does this neurosis essentially consist? What are the anatomical or chemical alterations in the nervous centres on which depend the psychical, motor, sensory, circulatory and other disorders that characterise it? And how do depressing passions, emotions, and overpressure in all its forms come to bring them into being? We do not know. One may suppose with Erb a delicate derangement of the nutrition of the nervous elements; with Beard, a want of balance between their union and their separation; with M. Féré, a

modification of their power of vibration; and yet be none the wiser.

But if we do not know the essential nature of the nervous disorder, we know at least that it shows itself by a *diminution of nervous energy* in the different systems; this energy is neither regularly distributed nor uniformly sustained.

Whatever be the cause of the neurasthenic state, whether it be constitutional or acquired, primitive or secondary, consecutive to gastric disorder, to an organic disease, or, what is most common, to a mental shock, it is this enfeeblement of nervous energy that constitutes it. And in making use of this expression we employ it in its most general signification, which is also its common signification; nervous energy is what usually is simply called energy. Physiologically we have very little knowledge of it; we understand something of electrical energy and of thermic energy, but nervous energy is known to us only by its manifestations; we are almost totally ignorant of its fundamental causative conditions. We cannot even localise the disorders that depend on it with any degree of precision; thus we could not say in what organ or organs the fatigue of the neurasthenic is situated. It does not seem to be in the muscular fibre; it is certainly not in the nerves; but is it in the end-plates in the muscles[1], in the

[1] On this subject see Mlle. J. Jotcyko, *Participation des centres nerveux dans les phénoménes de fatigue musculaire*, in *Année psychologique*, 1900, and the article by Z. Trèves, id., 1905.

cells of the spine, or in those of the cerebral cortex? There seems to be no doubt that, in large part at least, the ready exhaustion of the neurasthenic depends on the disorder of these last. Let it be carefully observed, however, that this does not amount to saying that the readiness of exhaustion is a psychical, or at any rate exclusively psychical, phenomenon.[1]

This is a point on which it is necessary to have a clear understanding, for the hygiene and treatment of neurasthenia depend on it.

When we speak of a psychical affection, we generally understand a disorder of the imagination, resulting from a notion or belief that is impressed on the mind. In such cases there are sometimes erroneous interpretations, as in melancholics or those with delusions of persecution, and sometimes mental representations of diseases, as in hysterics. One is certainly justified in asking if systematised delusions, or the delusions of melancholia, or the psychical disorders of hysteria, are really disorders that are primarily and fundamentally psychical. They certainly show themselves, clinically at least, as such, whatever their origin and their organic and psychological causes may be. This is not the case with

[1] Dr. Maurice de Fleury, in his very interesting work, *Les grands symptômes neurasthéniques*, wrongly regards us as partisans of the psychical nature of neurasthenia. We are anxious to dispel this misunderstanding, which may have originated in certain passages of the first edition of this work, in which perhaps we expressed our opinion with insufficient precision.

neurasthenic manifestations; here we have to do with fatigue, with exhaustion, with diminution of nervous energy. Nothing resembles the permanent and chronic condition of the neurasthenic so closely as does the transient and passing condition of the man who has incidentally been overtaxed by some excess of work or of the table, and by the insomnia which often follows; in both cases there occur headache, and a feeling of lassitude and of physical and mental powerlessness, with phenomena of gastric atony; these symptoms are doubtless more marked in the former than in the latter, but, apart from the question of degree, they are identical in the two cases. In such circumstances imagination, auto-suggestion, and erroneous beliefs have nothing to do with the causation of the phenomena. If they do intervene, it is secondarily; they then fix the symptoms, and render them more tenacious and more chronic.

We have already touched on this point in connection with the mental state of neurasthenics, and we shall return to it again when dealing with psychotherapeutic treatment. We shall show, moreover, that certain of the phenomena of exhaustion, amyosthenia for example, may be lessened, or even dispelled, or on the other hand increased, under the influence of mental causes; this does not mean that they are "imaginary," but that they are influenced by stimulating agencies, among which mental

agencies hold an important place. I do not believe, any more than does Maurice de Fleury, in "the pure and simple subjective nature of the "sensation of fatigue in true neurasthenics"; on the contrary, I think with him that this "sensation of fatigue, this feeling of heaviness in "the body, this need of making efforts in order "to walk, to go upstairs, or to stand up, this "emptiness in the head, which gives the impres- "sion that one is about to faint, but which never "goes so far, this distressing need of recruiting "one's strength, this whole group of symptoms "that characterises nervous exhaustion, all these "obey fixed laws which are laws of mechanics." This does not prevent me, however, from holding that these patients may grow habituated to their feelings, and, as a result of this habit, which becomes a sort of auto-suggestion, they may, at any given moment, mingle "a good deal of imagin- "ation with their feeling of lassitude"; traumatic neurasthenics are a proof of this.

But, in my opinion, we should misunderstand neurasthenia and neurasthenics if we considered only these secondary auto-suggestions, and if we referred all the symptoms to them. We should then be subordinating the constant to the inci- dental, the primitive to the secondary, the princi- pal to the accessory. I willingly admit, with Dubois (of Berne), that when one analyses the fatigue of a neurasthenic, one can often discover

"a thick coating of auto-suggestion of fatigue "round a nucleus of true fatigue." But I cannot agree with him that as a rule the coating is as "enormous," and the nucleus as "imperceptible" as he supposes.

Neurasthenia is not a disease due to auto-suggestion, like hysteria, or at least it is only secondarily so; it is above all a disorder of the energy.

PART V.

PROPHYLAXIS.

CHAPTER I.

GENERALITIES.

Prophylaxis, looked at as a whole, pursues a double end: it aims in the first place at removing the generating causes of diseases, and in the second place, if these causes are inevitable (as is notably the case with established hereditary defects), at placing the subjects exposed to their noxious influence in a state to resist them. When studying the causes of neurasthenia, we saw how important was the part played by *morbid heredity* in the development of that affection; we were led to recognise that neuro-arthritic heredity is able by itself to engender the neurosis, but that it most often acts as a predisposing cause, by bringing about in those subjected to its influence that inborn debility of the nervous system which leaves them without defence against the multiple causes of the disease. The first task to be fulfilled in the preventive treatment of neurasthenia is thus quite naturally sketched out. It consists in

safe-guarding the future of children born of neuropathic or arthritic parents, by repressing their hereditary tendencies and strengthening as far as possible the energy and resistance of their nervous centres. To attain this end nothing less is needed than the putting in practice, methodically and patiently, of all the means at the disposal of hygiene, and that during the whole of the period of development, from infancy to adult age. To state precisely the details of such a programme is to set forth the regimen of *physical and moral education* that is appropriate to children burdened with hereditary defects, or congenitally predisposed to nervous exhaustion.

On the very threshold of this study we are met by a fundamental question. Is it certain that education is able to repress congenital morbid tendencies, to modify profoundly in the individual the temperament, the propensities, and the nervous constitution that he has inherited from his forefathers? On this point scientists and philosophers have put forth opinions that are very dissimilar and even absolutely contradictory. It is well known how the reforming and plastic power attributed to education was exaggerated in the 18th century; some went so far as to ask ingenuously, with Helvetius, if talent, like virtue, could not be taught, and if the differences that exist between men did not proceed solely from differences in the surroundings and in the education

received. In our days, after the observations that have been made relative to the effects of heredity, there is rather a tendency to adopt the contrary belief. Many think with Herbert Spencer[1] that education is useless, or almost powerless, that human evolution is always and inevitably ruled by heredity, that the moral destiny of the man is contained in the fœtus, and that madmen and persons of unbalanced mind are, like poets, born not made. According to this extreme doctrine then, it seems that the nervous defect, once implanted in the family, must unavoidably be transmitted to all the descendants, producing either moral insanity or diseases of the nervous system, or some other form of that impoverished condition of the body, due to excess of disassimilation over assimilation, which has been called physiological misery, a condition which will end one day in sterility, and thereby in the extinction of the family. This modern conception, which accords to heredity a power at least equal to that ascribed by ancient poets to Fate, is assuredly excessive. The antinomy that exists between the power attributed by certain thinkers to education, and that attributed by others to heredity, does not correspond with the facts; between the extreme views there is place for an intermediate opinion more conformable to the reality of things. It is

[1] Mr. Spencer held that "imperfections of nature may be diminished by wise management." *Education*, stereotyped edition, p. 96.—*Trans.*

certain that the vices of constitution accumulated in some families may act with a sort of united energy, and produce irresistible outbreaks in the progeny. But hereditary influence does not always act so powerfully, and this is unquestionably the most frequent case. It is then that education may intervene efficaciously; it succeeds in giving birth to artificial instincts capable of balancing the hereditary instincts, and even of suppressing them; in short, of substituting for innate *ancestral habit* an acquired *individual habit.*

The education of children with a hereditary neurotic predisposition should pursue a triple end: (1) to develop harmoniously all the capacities of the individual, and more particularly the capacities special to each, but in such a degree as not to injure the general equilibrium of the organism; (2) to keep down any hereditary tendencies that may disorder the physical and moral equilibrium; (3) to strengthen the energy and the physiological power of resistance of the nervous system.

A good method of education should tend first of all to insure the development of the strength and of what is called *physical* health. That is the first requisite, since physical health is the essential condition, or, if the expression be preferred, the basis of intellectual health. After physical development comes *moral* development. Moral education, in fact, possesses a far more powerful

action than mere instruction as a means of rectifying morbid hereditary tendencies. It is much more fitted than intellectual education, in the proper sense of the word, to endow men with physical qualities that will make them strong and unyielding in the struggle for life. Scientific education, then, occupies only the lowest rank, and we have not to concern ourselves with it here except in its relation to hygiene.

We shall, then, in this part examine successively the principles that should govern: (1) the physical education, and (2) the moral education of children predisposed by heredity to nervous exhaustion.

CHAPTER II.

PHYSICAL EDUCATION.

There can be no disadvantages in developing the strength of a child's body, to whichever sex it belongs, or however robust may be its constitution; physical health, in fact, is under all circumstances a desirable possession. But it is in the case of children sprung from a neuro-arthritic stock, and hereditarily predisposed to disorders of the general nutrition and of the nervous system, that cultivation of the bodily energy, such as is given by a well thought-out physical education, is especially necessary. "In primitive times," says Spencer, "when aggression and de-
"fence were the leading social activities, bodily
"vigour with its accompanying courage were
"the desiderata; and then education was almost
"wholly physical: mental cultivation was little
"cared for, and indeed, as in the feudal ages, was
"often treated with contempt. But now that
". . . social success of nearly every kind de-
"pends very much on mental power, our educa-
"tion has become almost exclusively mental.
"Instead of respecting the body and ignoring the

"mind, we now respect the mind and ignore the "body."[1] Although in this respect a happy reaction has occurred in the course of these last years, Spencer's criticism remains in great measure thoroughly well founded, and one is still warranted in saying that among the educators of youth, whether parents or masters, "there are "few who seem to understand that there exists "in the world what may be called *physical "morality*."

The physical education of those predisposed to nervous exhaustion involves the observance of a large number of hygienic measures dealing with environment, alimentation, and physical exercises. These we shall now examine briefly.

1. **Environment.**—Large towns form the most unfavourable environment possible for the physical development of these subjects. This is especially true for quite young children, that is, for those who are passing through the period of growth that extends from the third to the twelfth year. In towns they breathe an impure air, are condemned to a relatively sedentary life, have no space for outdoor games; the noise, the contact of crowds, the social gatherings in which they are too often mingled, the thousand causes of excitement engendered by town life, are so many injurious conditions from which they must at all

[1] *Education: Intellectual, Moral, and Physical*, ch. iv., pp. 170, 171 (cheap edition).

cost be removed. On the other hand, the country is the ideal place of residence for children of this age: the calm life of the fields, without theatres or concerts or social gatherings, but with pure air, simple food, incessant commerce with the inanimate and animate objects of nature that have so much attraction for them, this life has a gently educating effect, and is the environment that suits them best. The country, says Möbius, is the paradise of children; but access to it is unhappily forbidden to many of them. Hence one should strive to apply to the town-bred child a system of education that as far as possible realises the valuable hygienic conditions that country life offers naturally.

In studying the causes of over-pressure in schools, we saw that the greater number of the nervous disorders it determined were much more the result of defective hygiene and physical education than of over brain-pressure properly so called. Thus the system of boarding schools is especially evil for children who are weakly or who have inherited a neurotic predisposition. Everybody knows the dangers that it may present in matters of hygiene: an unhealthy, shut-up, sedentary life, overcrowding, as well as strict rules and a rigid arrangement of life that too often break the initiative of the child's will, etc. All these disadvantages are serious, and if they have been in some slight degree lessened in consequence

of the reforms recently introduced into the scholastic system, they none the less continue to exist to-day. The duration of classes is excessive, so that the children breathe vitiated air in the class-rooms. The food is sufficient, but the time for meals is too short, and in the majority of lyceums the boys still eat quickly and in silence. The hours of sleep are too limited, and, in consequence of the overburdening of programmes of study, work-time is too long and the hours of rest are insufficient or badly portioned out. Since almost all lyceums are situated in the interior of towns, the fields and courts where the boys play are too small and hardly allow of "games of pursuit," which, however, are the healthiest of all exercises for children and adolescents. Finally, the morals of boarding-schools leave much to be desired. M. Sainte-Claire Deville[1] more than thirty years ago said very justly in this connection: "Experimental "morality, if I may be allowed the expression, "can no more be practised on man than experi-"mental physiology; but when one works with "animals, and, allowing always for the human "intellect, seeks to discover the physical causes "of the defects and vices of children, who at "certain periods of their development come "so near to animals, I am persuaded that one

[1] Quoted by M. Guyau, *Education and Heredity* (p. 114 of English translation by W. J. Greenstreet. London: Walter Scott).

"may arrive at practical consequences of high "interest. . . . In general, whenever ani- "mals of the same sex, and especially of the "male sex, are brought together and made to "lead a confined life, a great excitement of the "instincts of reproduction is first produced, and "then a redoubtable perversion of these same "instincts. If, on the contrary, one puts these "animals—which are formed to live in society— "either in herds or in complete liberty, one at "once sees their normal characters assume the "upper hand. . . . What happens in a herd of "animals happens also in a gathering of male "children, no matter of what kind it be, or by "whom brought up, and even if the children be "guarded by the strictest supervision, both by "night and by day. The most serious danger of "these vices for society is the exaggerated de- "velopment of the sexual instincts between the "ages of twenty and thirty, giving rise to de- "bauchery and lubricity. . . ."

It is evident that all these defects, all these sins of hygiene that are inherent, so to speak, in school-life, cannot be compensated by the "mutual correction of character" spoken of by partisans of boarding-schools. Consequently children sprung from nervous parents should be forbidden to become boarders in lyceums and schools, and should be recommended to join as day-boys. Unfortunately, if boarding-schools be an evil they are

a necessary evil, because for many parents settled far from large towns they are the only means of having their children taught. They must, then, be brought to perfection. Moreover recourse might be had, for children who have inherited a neurotic predisposition, to the *family* system that has long been in vigour in some English schools and in the majority of the towns of Germany. "At present," says M. Michel Bréal, who has made a most interesting study of these questions of scholastic organisation, "out of every thousand boys attending the German Gymnasia there are not a hundred who do not live in families." The children are entrusted to respectable families, who give them board and lodging in return for an often modest payment. They have their place at the table and at the family hearth, and only go to the gymnasium to receive instruction during class-hours. This system formerly existed in France too; in his memories of childhood and youth, Renan recounts that the school where he received his first lessons "gave an education to all the youth of the little town and the country for six or eight leagues round. There were few boarders. The young people, when their parents did not live in the town, stayed with the inhabitants, several of whom gained small amounts by the exercise of this hospitality. . . . This system was that of the middle ages. It is still that of England and Germany, countries so

"advanced in all that concerns educational "questions."

2. **Physical Exercises. Gymnastics.**—What is the best form of gymnastics for children and school boys? Young children brought up in the country, when set at liberty after the hours of lessons, always find in their neighbourhood both space to play and attractive incentives to running and all sorts of games. The long walks over broken country, the chases, in a word the thousand games that they indulge in, constitute a form of gymnastics that is natural and perfect, and that leaves nothing to be desired from the hygienic point of view. But what physical exercises should be prescribed to schoolboys in towns, whom the overloading of programmes of study condemns to an excessively sedentary life and sometimes to over brain-pressure? This is a hygienic question of the highest interest.

In 1887, in the course of the campaign that was instituted against overpressure in schools, the Academy of Medicine was officially asked to give its opinion on the extent of the evil and on the nature of the remedies that should be applied. It formulated a series of conclusions on the subject, one of which aimed especially at physical exercises. "It is imperatively necessary to make all school "children go through daily exercises of physical "training proportioned to their age (walking, "running, jumping, military formations and

"evolutions, regulated and prescribed movements, "gymnastics with apparatus, exercises of all "kinds, games of strength, etc.)." Now these different exercises that the Academy recommends in a lump, have not a uniform hygienic value; they are liable to produce very dissimilar physiological effects, and one could not without serious disadvantage prescribe one or other of them indifferently to the weakly or peculiarly excitable children with whom we are dealing here. It is necessary to make a choice, and to found the choice on reason. M. Fernand Lagrange,[1] whose competency in all that relates to the physiology of bodily exercises is universally recognised, has made on this point a series of remarks of incontestable originality and justice. He was certainly the first to ask if the methods of gymnastics that are most in honour to-day, and notably those approved by the Academy of Medicine, were really those best able to give to the muscles of school boys the activity that they need, without imposing a superaddition of fatigue on their already overdriven brains. Now M. F. Lagrange's studies on this subject led him precisely to recognise that, in most forms of exercise used at lyceums and schools, the brain is obliged to take part, and to work as much as the muscles. Fencing is a type of the exercises that tire the

[1] *Physiology of Bodily Exercise*, by Fernand Lagrange, M.D., International Scientific Series.

nervous centres much more than the muscles of the limbs. During the assault the fencer holds himself constantly on the watch. Even when he seems to be at rest, his brain and nerves are under the influence of excessive tension. His mind, always awake, always in an effort of sustained attention, watches for the moment of attack or riposte. All the muscles are kept in a state of latent excitation, which has ceased to be rest and has not yet become movement. One can easily conceive that this work of preliminary co-ordination exacts a great expenditure of nerve force, and "this expenditure sometimes acquires still "greater proportions in certain phases where it "is no longer a simple movement, such as exten- "sion of the arm in a straight line, that is to be "executed, but a series of combined muscular "acts, as in a counter-parry followed by a riposte. "In this case several movements must at a given "moment follow one another rapidly and end in "a single muscular effort both precise and sudden. "Thus a bout assumes quite the character of an "intellectual operation." In other words, it is "head work" that the fencer accomplishes, and those who know from experience the sensation of *nervous fatigue* that follows fencing bouts will agree that it resembles, not the weariness that one feels after a large expenditure of brute force, but the mental exhaustion that succeeds to every sustained effort of will, "as when, for example,

"a long struggle has been made to repel the in-
"fluence of another's will, or when the mind has
"been kept powerfully strained over the solution
"of a difficult problem." When it is pushed too far, this nervous fatigue may further manifest itself by a passing attack of excessive excitement, sometimes accompanied by insomnia. Hence fencing with foils, singlestick, boxing, and all exercises of this kind that imply a contest, are unsuitable to children whose brains are active, and especially to those who are endowed with a nervous temperament and are easily excitable. They antagonise, it is true, the effects of a sedentary life, but they shake up the nervous system too violently, and instead of resting the mind they aid in producing over brain-pressure.

Gymnastics with apparatus, that is to say exercises on the trapeze, the horizontal bar, rings, and parallel bars, also have serious disadvantages. They are usually unattractive. They bring into play little beyond the muscles of the arms; they may give rise to deformities (excessive development of the muscles of the shoulder and arm, deviations of the spinal column, curving of the back). The movements that they exact are chiefly difficult movements, veritable feats. Now the general effects of any form of exercise are proportionate to the expenditure of force that the exercise requires, and not to the difficulties presented by the details of its execution. The

greater number of the movements that boys in lyceums try to execute during the "gymnastic class" under the eye of their monitors, require in fact more skill than muscular effort, and their difficulty consists chiefly in finding out experimentally or methodically the muscles that must be put into action. One must not then, in looking at the matter from the hygienic point of view, give the preference to those exercises that are only skilful, and neglect, as is done, the exercises that are really violent, but in which muscular strength is expended without there being any need to calculate laboriously the manner of its use. Gymnastics, as they are *taught* in France to-day in our educational establishments, demand real exertion of the intellect from those who practise them, and bring the psychical faculties into play much more than the muscular strength. Those whose brains already expend enough energy in the way of intellectual work are not those to whom *difficult exercises* are suited.

We have just seen what are the bodily exercises that should be eliminated from the programme of physical education. Let us now see what are those that should be recommended to children and young people with a neurotic or arthritic taint, to those in fact whom we have especially in view. These exercises should combine the various characters that follow:

(*a*). They should be easy, or, in other terms,

should not require a long apprenticeship and consequently sustained cerebral tension. If they do not fulfil this condition, they may produce either irritability of the nervous system or exhaustion.

(*b*). They should require fairly intense muscular work, and should put the person who executes them *moderately* out of breath. They then promote the development of the thorax and the oxygenation of the blood, and regulate tissue-change, these being the only useful effects of physical exercise when it is used to obviate the results of a sedentary life (insufficient oxygenation, disorders of metabolism, etc.).

(*c*). They should be sufficiently attractive, and should be carried out as far as possible in the open air.

Now the easiest exercises, and those that produce the best results, are marches, walks, running, chasing, and the old French games of Prisoners' Base, ball, leap-frog, skipping for young girls, etc. These exercises of speed are especially adapted to children who have not reached their fifteenth year. After that age, young people are more ready to devote themselves to athletic exercises, which are generally more attractive to them. Among these, rowing, which is so easily learnt, and cycling, seem to us especially useful. The apprenticeship that they exact is never very long. Once they are learnt, they only

require rhythmic and *automatic* movements, so much so that, while they produce "air-hunger" and deep inspirations, they allow of complete rest to the brain. The fatigue that they cause is purely muscular, and thus they combat at once the disadvantages of a sedentary life and those of overpressure of the intellect.

3. **Hygiene of the Skin.—Hydrotherapeutics.** From their youngest age the children of neurotic parents should be accustomed to hydrotherapeutic practices. Cold ablutions, douches, plunge-baths, sea or river bathing, followed by friction, will always (unless there be special contra-indications) produce a beneficial effect. The action, both sedative and tonic, of hydrotherapeutic practices upon the nervous system is so well known that we need not insist longer on their hygienic properties.

4. **Alimentation.** — It is evident that the majority of those who have inherited a neurotic predisposition should by no means be subjected to a special dietary. We must mention, however, that they should be allowed only an extremely moderate use of alcoholic liquors. A special regulation of the diet is necessary only for those who are the children of parents suffering from arthritis, gout or lithiasis, and who have already themselves exhibited pathological manifestations of the same origin, (eczema, tendency to obesity, etc.).

CHAPTER III.

MORAL EDUCATION.

This part of education is assuredly the most important, and yet the most neglected. To it belongs the development in children of that union of moral qualities that makes energetic and well-balanced characters, that is to say characters able firmly to resist the dissolving action of afflictions and depressing emotions, the real origin of so many cases of neurasthenia. It alone can give the child a strong will, confidence in himself, a firm judgment, in one word all the attributes of moral health and strength. Unhappily it is almost always left to chance. Parents themselves have rarely an exact idea of the aim of education, especially when the children are still very young. "What," says M. Guyau humorously, "what is "the moral ideal set before the children in most "families? Not to be too noisy, not to put the "fingers in the nose or mouth, not to help themselves with their hands at table, not to walk in "puddles when it rains, etc. To be 'good'! For "many parents the 'good' child is a little puppet "that must not move unless the strings be pulled."

The remark is just, and it will be agreed that it is a loss of precious time to devote a child's first years to such an up-bringing; to train it in this way is not to educate it. One can easily understand that in these conditions free play is given to the evil instincts inherited by children. All sorts of abnormalities of the character, a weak and capricious will, obstinacy, selfishness, liability to impulses and to anger, etc., will develop in them all the more that, being the off-spring of unbalanced, neuropathic progenitors, they will often have before their eyes the invariably contagious example of the faults and moral obliquities of their parents themselves.

In order to be efficacious, moral education must be put in exercise from the earliest years, during that period when the child's mind is particularly apt to receive impressions from without and to preserve the mark of them. It is not without reason that the state of a young infant has been compared to that of a hypnotised subject; there is the same absence of ideas in the one and in the other, the same domination by a single idea (passive monoideism). If it be true that, as has been asserted, all children are not hypnotisable, at least they are peculiarly open to suggestion in the waking state. By this we mean that they show themselves perfectly docile to all the influences of those round them. All that they feel, all that they perceive, impresses their minds and may become the

starting-point of a habit that will last perhaps their whole lives long. This kind of suggestion differs from hypnotic suggestion in many important features that it is not our business to define here, but it is liable to produce sensations and sentiments, ideas, volitions, and even acts, and by the repetition of these to create instincts and habits in the child. Suggestion may constantly be employed as a means of moral education and as a powerful modifier of hereditary tendencies. In any case we believe that it must be one of the great agents in the moral education of nervously predisposed children, because these are particularly impressionable and sensitive to impulses communicated to them by suggestion. Suggestion has been very justly defined as "the introduction into the mind of a practical belief that works out its own fulfilment" (Guyau). It follows that all moral education must aim at the following end: to convince the child that he is capable of good and incapable of evil, in order to give him the power to do good, inability to do evil; and to make him believe that he has a strong will, and is master of himself, in order to impart to him the strength, and ultimately the habit, to exert his will and to govern himself.

Esteem shown in public is one of the most powerful forms of suggestion for a moral purpose. To say to children that they are supposed to have such and such a quality often leads them to do all in

their power to justify the good opinion; consequently it is necessary to impart to them as much as possible an early knowledge of their good tendencies, to attribute to them always the qualities that one wishes them to have, and to believe them capable of goodness and willingness. On the other hand the educator must carefully avoid giving to the child "the formula of his bad instincts." To say aloud in a child's presence that he is lazy, that he is unable to do this or that, is often to suggest to him, together with the belief that he is incapable of application, the very fault that one wishes to repress. For the same reason the worst interpretation must never be put on any culpable action that he may commit. The young child is too unconscious to have a deliberately perverse intention; to ascribe to him the fixed determination, the resolution to do evil, is to judge him unjustly and often to develop in him an evil instinct, together with the notion that he can deliberately commit a wicked action. It is better in such a case to tell him that he *made a mistake*, that he did not foresee the consequences to which his action might lead, etc.

A child should early be accustomed to have confidence in himself. For this purpose all about him must encourage him and receive with kindliness whatever he does or says out of good-will, only giving him gently to understand, if necessary, that he might have done better and been more

successful if he had followed this or that other course. It is of the highest importance that timidity should not gain possession of him. Nothing is more apt to deprive him of confidence in himself than to tell him brutally that he does not understand, does *not know how*, *cannot* do this or that, or to laugh at his attempts. "Man," said Pascal, "is so made that, by dint of being told "that he is a fool, he believes it; and by dint "of telling it to himself he makes himself "believe it. For man carries on with himself an "*internal conversation* that it is important to "regulate well. . . . ." Now the child in this respect is exactly similar to the man. His educators then must persuade him that he *can understand* and that he *can do* this thing or the other, and must be pleased with his slightest effort.

The child must, again, be habituated to *will* and to accomplish what he has willed, to persevere in his efforts, in one word to be capable. For this reason it is good to set him a *task*. But this task should for a long time be below his powers, and should only increase in proportion to their development. If this condition be not fulfilled, if the child always feel that he is not able for his work, then the task set him, instead of being a salutary exercise, a training of his will and attention, will only serve to convince him of his powerlessness and to discourage him. Little by little he will

lose all confidence in his abilities and will mistrust himself; and this sentiment, once it has grown up and installed itself in his consciousness, may give rise in him to that moral paralysis that is called aboulia.

Against evil instincts and uncontrollable impulses the surest remedy is again suggestion by precept and example. To teach children to be firm, one must be firm in dealing with them. They admire strength of will in others just as they admire physical strength, and, as they always model themselves on those about them, to give them an example of firmness and to have a strong will, is to make them firm also and to strengthen their will. But it is absolutely necessary to make them understand once for all that the commands given to them are reasonable and have no other object than their good, and thus to accustom them to obey confidently when the reason of the actions commanded escapes their comprehension. To obtain from them this habitual readiness to obey, it is necessary that the educators, whoever they may be, should establish their *authority*. Now this is not a matter of crushing the children's will by breaking it in, so to speak, mechanically, but rather of *directing* it, taking care always that it does not enter into conflict with the will of the parents.

In what then does authority really consist, and how must it be exerted? In his excellent book

on "Heredity and Education," Guyau has given a happy definition of it. "Authority," he writes, "is made up of three elements: (1) affection and "moral respect; (2) the habit of submission, a "habit springing from the exercise of the quality; "(3) fear. Each of these elements enters into the "sentiment of authority, but the others must be "subordinated to affection. Affectionate feeling "takes away the necessity for harsh authority "and chastisement." The child that needs chastisement is wanting in affection, and it is by the love one bears him that one may arouse in him a return of that sentiment. Moreover, the affection of his parents must always be a reward that he must earn by good conduct, a reward superior to all others. Respect is merely a form of this sentiment. There remains fear. The chastisement that inspires it must always be just, and should only be used as an exceptional sanction, exclusively reserved for grave faults, for open rebellion. It is its exceptional character that makes chastisement efficacious. To multiply reprimands and corrections is to deprive them of all reforming power over the child's mind. If he do wrong again a short time after having been punished, the best plan is to shut the eyes, to appear not to see the bad intention, to change one's manner abruptly, to distract the child, "and thus render the misdeed abortive." Chastisement, whether it be bodily or other, must always be

administered without roughness or anger, so that the child may not take example from its master to show itself rough and irascible in its turn. Finally, care must be taken to give the punishment a moral aspect, for it is not the fear of chastisement in itself that must be aroused in the child's mind, but rather a moral regret for having deserved it.

Bad temper, melancholy, pessimism, and selfishness, are perversions of character that are frequent in neuropaths and in those of unbalanced mind. The germ of these unsociable sentiments is found in certain mental states of the child which appear to have little gravity, but which must be repressed in good time.

Sulking, for example, is only a first manifestation of unsociableness. The child who sulks takes pleasure in displeasing those who thwart him, and satisfies his self-esteem by resisting the will of others without acknowledging himself vanquished. By allowing him to acquire the habit of sulking after every reprimand, one gives him the habit of continuing in the fault committed without any attempt at making amends for it, and consequently without remorse. Children then must be accustomed to be quickly reconciled with the person who has scolded them. They thus form the habit of being unable to bear the idea of "being cross" with any one, of wishing to make amends for their faults, which is one

form of active remorse, and of waiting eagerly for the word that reconciles and brings peace to the heart.

Bad temper is very often the result of education. The child who is overwhelmed with incessant reproaches, or who is thwarted uselessly and on all occasions, retires within himself and takes to brooding over his woes and disappointments; little by little he accustoms himself to melancholy, and later on he will be more inclined than others to pessimism, moral depression, and discouragement.

There is another mental perversion that it is important to combat from infancy; that is vanity, which contains in germ the exclusive preoccupation with self that is so common among hypochondriacs and hereditary neurasthenics.

Excessive *emotionalism* is a defect common to the greater number of children sprung from a neuropathic stock, and its development must at all costs be repressed. Emotionalism most certainly depends on an innate disposition of the nervous system, which causes the least moral shock, the slightest contrariety, to provoke in the nerve centres a painful reaction that is diffused through all the organs, and produces in them that complex group of disagreeable impressions that constitutes emotion. But this, again, is a tendency which may be kept down and even extinguished by a wisely-conducted physical and moral

education, just as it is cultivated and naturally increased if that obstacle to it be neglected. To attain this end, various measures must be put into operation. The education of the will, by strengthening the cerebral centres that control reflex actions, contributes a large share; physical education, bodily exercises, and hydrotherapeutic practices give tone to the nervous system and also lessen its sensitiveness. On the other hand nothing is more pernicious than the terrifying stories, the fantastic descriptions of monstrous beasts, that are inflicted on the imagination of children. These cultivate in them the sentiment of fear, and often nocturnal terrors; the hallucinations of the half-sleeping state, that agitate them in the early hours of the night, have no other origin. Nothing is more contagious than an emotional state, and therefore it is important that when they reach a more advanced age they should be carefully kept away from witnessing the emotions of their parents or teachers, who should never show them the spectacle of their own distress, fears, or impulses of anger. In other words, children should not be associated early with the life of those about them. They must be removed from all surroundings where causes of excitement and agitation abound. In towns they should be forbidden to attend parties, dramatic spectacles, or the theatre, till the twelfth or fifteenth year of their age.

At the epoch of puberty, those who are predestined by their hereditary taints to morbid impulses of all sorts should be the object of particularly attentive supervision. The awaking of sexual instinct and desires throws the equilibrium of their nervous system into profound disorder. The majority of them give themselves up to excessive practices of onanism, and that, as we saw in studying the causes of neurasthenia, is often a powerful factor in its production. Children brought up in the midst of the family may be preserved from this perversion if care be taken, on the approach of puberty, to turn them away from all that may attract their attention to the sexual functions, or prove a cause of genital excitement. But in boarding-schools these preventive measures cannot be carried out, and the best plan is to attenuate as far as possible an evil that cannot be prevented. This may be managed by a rigorous supervision at all moments, and by putting into operation the invariably sedative action of physical exercises and hydrotherapeutic practices. Finally, it is good for hereditarily predisposed subjects, when they reach adult age, to take to a profession. For every profession, when once adopted, corresponds from the moral point of view to a group of constant and co-ordinate suggestions that impel us to act in conformity with a ruling idea, and impose on us at any moment, in despite of our individual passions or hereditary inclinations,

a rule of conduct conformable to our calling.[1]

[1] Goodhart (*On Common Neuroses*—London, 1894) believes that certain professions seem to develop neurotic tendencies; and notably, he says, the clerical, the medical, and that of dealing in stocks. But see the table on p. 23. It is evident that fixed hours of work and a fixed salary are especially advantageous features in an occupation in the case of neurotic subjects.—*Trans.*

CHAPTER IV.

PROPHYLAXIS IN ADULTS.

The preventive measures that are applicable to adults follow naturally from the study of the exciting or determining causes of nervous exhaustion. We cannot enumerate them here, because they form part of the rules of *Individual* and *Professional Hygiene* in general. And, besides, the great causes of neurasthenia are almost unavoidable. How are we to prevent moral overpressure, the origin of so many cases of nervous exhaustion? This overpressure has become to some extent a necessary condition of the life of our epoch. The knowledge of the higher causes that inflict it on the present generation, the study of the means adapted to lessen it or prevent its existence, these clearly are not under the control of hygiene in the strict sense of the word. They belong much rather to the province of sociology. Herbert Spencer, in his philosophical commentaries on the social life of the Americans, seems to have perceived with a sure vision the profound causes of this over-activity, of this existence at high tension in which the toiling classes of large

industrial and commercial centres exhaust themselves. "Moreover in every circle I have met "men who had themselves suffered from nervous "collapse due to stress of business, or named "friends who had either killed themselves by "overwork or had been permanently incapacitated, "or had wasted long periods in endeavours to "recover health. . . . Immense injury is being "done by this high-pressure life—the physique is "being undermined. . . . Exclusive devotion to "work has the result that amusements cease to "please; and when relaxation becomes imperative, "life becomes dreary from lack of its sole interest "—the interest in business. . . . It is recognised "that getting on devours nearly all other satis-"faction—there is not that abandonment to the "moment which is requisite for full enjoyment; "and this abandonment is prevented by the ever-"present sense of multitudinous responsibilities. "So that beyond the serious physical mischief "caused by overwork . . . there is the further "mischief that it destroys what value there would "otherwise be in the leisure part of life." After analysing the social and political causes of this excessive activity, this desperate pursuit of fortune, Spencer declares that we need to revise our ideal of life, and that if we look into the past we find that the ideal has varied with varying social conditions. Everyone knows that to be a victorious warrior was the loftiest aim among the

celebrated nations of the past, as it still is among many peoples of to-day. In those times man's true business was to fight. We have changed all that in our modern societies. With the development of industrial life, "the duty to work has taken the place of the duty to fight."

Will this modern ideal survive in the future? We may reasonably doubt it. It is appropriate to those ages in which the conquest of the earth and the subjection of natural forces to man's use are the predominating need. "But hereafter," writes Spencer, "when both these ends have in "the main been achieved, the ideal formed will "probably differ considerably from the present "one. . . . I should have liked to contend that "life is not for learning, nor is life for working, "but learning and working are for life. . . . We "may trace everywhere in human affairs a ten- "dency to transform the means into the end. All "see that the miser does this when, making the "accumulation of money his sole satisfaction, he "forgets that money is of value only to purchase "satisfactions. But it is less commonly seen that "the like is true of the work by which the money "is accumulated, that industry too, bodily or "mental, is but a means, and that it is as irration- "al to pursue it, to the exclusion of that complete "living it subserves, as it is for the miser to "accumulate money and make no use of it. Here- "after, when this age of active material progress

"has yielded mankind its benefits, there will, I "think, come a better adjustment of labour and "enjoyment. . . . In brief, I may say that we "have had somewhat too much of the gospel of "'work.' It is time to preach the gospel of "relaxation."[1]

[1] Spencer, Speech in New York, Nov. 9, 1882. See Essays, vol. III., pp. 482-486.

PART VI.

TREATMENT.

CHAPTER I.

GENERALITIES.

In the last part, which was devoted to prophylaxis, we had to confine ourselves to indicating the principles which we believe should govern the physical and moral education of those predisposed by heredity to nervous asthenia. It is indeed in a good education that the surest prophylaxis of nervous exhaustion seems to us to lie. Adult age, which is that of the struggle for life, is inevitably exposed to the multiple and diverse influences that produce neurasthenic states; cares, passions, reverses, and sicknesses are so many causes which the best prophylactic code cannot suppress; the preventive rules that might be formulated against them would have no practical value, because they make an integral part of life itself. Thus the only course possible is to prepare men by a vigorous education to resist their onset victoriously.

We must now study the different hygienic

methods that may be put into operation to cure confirmed neurasthenic states. Experience has shown that the best treatment of neurasthenia is that which consists in a wise regulation of the patient's hygiene. In the very great majority of cases, indeed, recourse should be had almost exclusively to the methodically combined application of the different hygienic agents at our disposal; the part played by pharmaceutical medication should here be altogether secondary. We shall show, moreover, that the employment of drugs is more often injurious than useful, that they may, to say the least, counteract the effects of hygienic therapeutics, and we shall examine the degree in which they are capable of aiding the curative influence of this last, which must always constitute the essential and fundamental part of the treatment.

The causes of neurasthenia and the clinical forms that it may assume are, as we have seen, extremely numerous, and it is clear that the details of the hygienic rules suited to each particular case are themselves variable, and that they may differ appreciably from one patient to another. Consequently, as we cannot repeat too often, it is indispensable to ascertain precisely, by a thorough inquiry, the real causes of the affection in each patient, the functional disorders by which it manifests itself, and the degree of importance of each. Having said this, it is evident that we cannot here

point out in detail all the variations of treatment required by the diversity of clinical cases. We shall confine ourselves to setting forth: (1) The general hygiene of neurasthenics, keeping more especially in view cerebro-spinal neurasthenia, which really answers to the commonest type of the neurosis; and (2) the special therapeutical indications of some of its principal clinical forms.

In the following chapters, which deal with the general hygiene of neurasthenics, we shall investigate successively what should be the diet of the patients, what climates are more especially beneficial to them, what advantages they may derive from hydrotherapy, massage, and gymnastic exercises, and also what must be the moral hygiene, or, if the expression may be used, the mental dietary of this class of subjects.

CHAPTER II.

GENERAL TREATMENT OF NEURASTHENICS. PSYCHOTHERAPY.

All authors agree nowadays in recognising the importance of psychotherapy in the treatment of nervous asthenia. And yet this subject has been almost invariably sacrificed in treatises and monographs. We hold, with Strümpel and Bouveret, that the moral action exerted on the neurasthenic by his physician and his surroundings, constitutes one of the most powerful therapeutic agents that can be employed.

This view, which we expressed in the first edition of this work, has since then been taken up again and developed by various authors,[1] perhaps even with some exaggeration. Thus Dubois (of Berne) has gone so far as to hold not only that psychotherapy is a mode of treatment applicable to all psychoneuroses without exception, an opinion to which we cannot subscribe, but also that its employment renders all other treatment unnecessary in neurasthenia. We cannot associate

[1] Dubois, *loc. cit.*—Jean Camus and Ph. Pagniez, *Isolement et psychothérapie*, with preface by J. Déjerine. Paris, Alcan, 1904.

ourselves with this exclusive view, to which, moreover, Dubois himself, and Déjerine, who has adopted it, are not strictly faithful, since they accompany psychotherapy by rest and diet.

It seems to us that there is nothing so injurious in therapeutics as a system. Psychotherapy is not a panacea applicable to everything, any more than is electricity or shower-baths, and one would only do it harm if one tried to employ it in one unchanging form in all cases of the psychoneuroses without distinction. We insisted above on the necessity of first forming an exact differential diagnosis before beginning the treatment of a nervous affection. A psychical treatment which succeeds marvellously in one of these affections may fail totally in another. Melancholia is not treated like the *folie du doute*, nor the latter like hysteria, nor is hysteria treated like neurasthenia, though it is akin to it in certain directions, or at least is often associated with it.

Moreover, it is almost a commonplace truth to say that the same treatment is not applicable to all forms of one single affection, and, as regards neurasthenia in especial, it is indispensable to adapt the methods of treatment, or at least their mode of application, to the peculiarities of each individual case.

Having made these reservations, we must give it as our opinion that, next to hysteria, neurasthenia is the nervous affection in which

psychotherapeutics render the greatest services.

It is not that, like some authors, we consider the complaint as purely mental. We have defined it as an exhaustion disease, and we think that it consists of an enfeeblement of nerve force. But if neurasthenia is far from being an exclusively, or even principally, a psychical disease, it is at least a disease in the origin and course of which psychical processes play a multiple and important part. These occupy a preponderating position in its etiology, because, as we have already indicated, the commonest causes of neurasthenia are of a mental nature—emotions, cares, disappointments, business worries. They occupy also a large place in its symptomatology, first, because exhaustion affects the psychical functions properly so-called (memory, will, emotionalism) in the same way as the other nervous functions, secondly and principally because they fix in the mind certain images which at once give rise to disorders that are permanent and durable, even when the cause that initiated them has disappeared. A local phenomenon which at the outset depended on pure nervous asthenia (such as gastro-intestinal atony, localised amyosthenia, topoalgia, etc.), may in the long run, when a habit has been acquired, form an integral part of the mental condition. Moreover, just as in organic diseases (as tabes or disseminated sclerosis) symptoms arising from apprehension, fear and auto-suggestion are often added by the

mind to those that depend directly on the lesion, so in neurasthenia the mind enlarges the picture by adding new phenomena to those due exclusively to exhaustion. Hence one can imagine that the part played by psychical processes in treatment must not be neglected; on the contrary, great importance must be attached to them, whether it be that one wishes to cause the disappearance—by isolation, for example—of the sensory impressions or associations of ideas that are liable to recall the emotions and anxieties which originated the complaint, or that one tries to stimulate the failing energy of the will, or again that one aims, by a sort of re-education, at dispelling bad habits that have been acquired and helping the mind to correct certain erroneous perceptions. Such, as far as neurasthenia is concerned, is the role of psychotherapy.

When setting forth the causes and symptoms of neurasthenia, we endeavoured to bring to the front the part played by moral troubles and sorrowful emotions in the etiology of the neurosis, and the importance of the state of mental depression in which the greater number of neurasthenics live, no matter what may have been the cause that produced their malady. Decay of mental energy and of will, tendency to discouragement, to melancholy ideas, and to the hypochondriacal preoccupations aroused and kept up by the distressing sensations that torment them, such, as

we said, are the essential features of the moral state of these patients. We rightly insisted on their impressionable natures, on the readiness with which they obey the various incitements that come to them either from themselves or from others, in one word on their suggestibility. They are almost all suggestionable in the waking state, though in different degrees. This suggestibility is a direct consequence of the enfeeblement of their moral personality, and is certainly an unfortunate condition, since it delivers them over almost defenceless to the usually depressing influence exerted on their minds by their functional disorders, and even by the environment in which their illness developed. But on the other hand it enables the physician to act beneficially on their mental state, to cheer them morally, and to restore their lost courage and confidence by removing from their minds the fears, the gloomy ideas, and the hypochondriacal obsessions which gave rise to the nervous exhaustion, or which contribute largely to keep it up.

The psychical treatment of neurasthenics does not consist only in the cheering moral influence that the physician is called upon to exert on the patient by his words and attitude. Independently of this direct action of the physician on the patient, there exists a whole group of psychical influences whose therapeutic value is not less, and which must be well understood: we refer to the

suggestions imparted to the patient's mind by the putting in action of the various hygienic measures adopted in the general treatment of nervous exhaustion. Isolation, life in the country and in a favourable climate, hydrotherapy, electricity, all these hygienic and therapeutic agents which seem to be directed solely to the organic condition of the patient, act also on his mental state. We do not assert that these physical agents, such as water or electricity for example, owe their therapeutic effects exclusively to the suggestive influence that they exert on the minds of neuropaths; but it is certain that that influence is considerable. Consequently we must here consider in succession:

1. The psychotherapeutic action of the different hygienic measures comprised in the general treatment of neurasthenia;

2. The psychotherapeutic rôle of the physician.

1. Psychical influence of the different hygienic measures utilised in the general treatment of neurasthenia (*Indirect psychotherapy*). — The beneficent action exerted on the moral condition of neurasthenics by the application of the various hygienic measures that we shall consider successively in the following chapters, is incontestable; it constitutes a valuable adjunct to the psychical treatment of this class of invalids. *Isolation*, withdrawal from the surroundings in which his neuropathic state developed, residence in the country

or in a special establishment, hydrotherapy, electricity, all these therapeutic agents do not only influence the somatic state of the patient, but, in very dissimilar ways, they also act beneficially on his mental state. It may even be affirmed that it is to this moral action that they owe the greater part of their curative power.

When he isolates himself from his family, and withdraws from the surroundings in which his neurasthenia developed, in order to live amid pleasant scenery in the country or to instal himself in a special establishment, the overdriven invalid immediately effects a reformation that is particularly favourable to the re-establishment of his moral equilibrium. He separates himself from the excitements and the causes of fatigue that are inherent in his profession, sometimes from the cares and disappointments or even the excesses of all kinds to which he was exposed in the social conditions in which he has hitherto lived; in short, he thus removes from his mind all the factors of overpressure and moral dejection that engendered the neuropathic state or helped to keep it up. He ceases to have constantly before his eyes the objects and the beings that have for long been the witnesses of his sufferings and have been closely associated with the memory and the thought of his daily troubles and miseries. In withdrawing from his habitual circles, the patient further escapes the often too attentive

cares of his relatives and the incessant questions about his health, or one symptom or another of his complaint, with which they overwhelm him; he breaks away, so to speak, from that moral atmosphere made up of solicitude and commiseration, and sometimes also of ironical indifference, by which his mental depression and the irritability of his temper have been fostered. In breaking abruptly with his habits, the neurasthenic, if in his new abode he comes under the cheering influence of a suitable climate and of the tranquil life of the fields, renews, so to speak, his mental *imagery*, and his hypochondriacal ideas tend to be obliterated. The discipline of the treatment prescribed to him restores little by little the energy of his will. A new personality begins to be substituted for the old. If at this moment the physician intervenes and influences his mind with cheering and ably conducted suggestions, the essential conditions of the psychical treatment of the neurasthenic state will be realised.

Isolation, that is to say residence in a special establishment, and separation from the family, are the essential elements of the systematic method of Dr. Weir Mitchell, a method that we shall later set forth in detail. But apart from this, isolation must sometimes be imposed, either alone or associated with other hygienic measures, in various forms of nervous exhaustion; and we must here indicate the cases in which it seems to

us to be absolutely necessary. It is clear that there is a whole group of neurasthenics who can be treated and cured while still left with their families. Such, for example, are those who have fallen into the slight form of nervous exhaustion in consequence of excessive bodily fatigues or intellectual overpressure. On the other hand, whatever be the cause of the neurasthenia, prolonged isolation and cessation of all relations with the family must be formally prescribed to the patient whenever he exhibits one of the following symptoms: profound moral prostration, anorexia, persistent hypochondriacal ideas, phobias, crises of anxiety; and the same holds good when to the fundamental troubles of nervous exhaustion are added a chronic intoxication, such as alcoholism, morphinism, chloralism, etherism, etc. The moral decay and the enfeeblement of the will that accompany, or rather that cause, these symptoms, constitute the fundamental character of such neuropathic conditions. And it is precisely these alterations of the personality that call imperatively for the isolation of the patient. Speaking generally, the physician must also insist on separation every time that, in his investigations into the invalid's surroundings, he discovers on the part of those living with him either exaggerated tenderness or disobliging indifference, or an irritating want of comprehension of his feelings of malaise and his sufferings.

There is, as we said, among the hygienic or therapeutic measures that usually constitute the treatment of nervous exhaustion, a certain number of physical agents the application of which may influence the mental state of the invalids in the happiest manner. In the front rank of these therapeutic measures that are capable of acting indirectly on the patient's mind must be placed *Electricity* in its various modes of application. There is no doubt that good results have sometimes been obtained from static electricity (baths, douches, frictions, etc.), or from the constant current, or faradisation; on some occasions the general condition of the patient has been sensibly improved, on others some conspicuous symptom has disappeared. It is, however, legitimate to hold that the majority of the successes that have been ascribed to electro-therapeutic measures are much rather attributable to the frame of mind in which the patients submit themselves to this kind of treatment, than to the organic modifications that it may have effected in their nerve centres. There are, in fact, some subjects who for one reason or another are convinced in advance of the efficacy of "electrical treatment"; they have faith in it. Others, of moderate culture, are vividly impressed by this physical agent whose nature seems to them mysterious and powerful. Among these subjects, who are, so to speak, prepared for a therapeutic miracle, the spark or

the effluvium quickly produces a beneficial auto-suggestion. Möbius estimates that four-fifths of the successes obtained by electrotherapeutics are due to the suggestive action that the use of it exerts on the patients' minds[1]. Eulenburg holds that the proportion of this class of cases is one fifth only. It seems to us difficult to draw up in exact figures the balance-sheet of the successes of electrical treatment that are attributable to suggestion. We do not deny that electricity may render real services apart from all moral influence, but it seems to us, as it does to many good observers, that its psychotherapeutic action is incontestable. The duty of the physician then is to discern exactly the cases in which the patient is capable of benefiting by this means of indirect suggestion, and to apply it then with all the care and all the seriousness required.

The cold water cure is another good stimulant to the mental energy. A feeble-willed sufferer from psychical asthenia, who forces himself to rise every day at a fixed hour in order to be played upon by a stream of cold water, undeniably exercises his faculty of volition. It is the same with the rule of life imposed on the patient by the physician; the discipline of the treatment to which he is subjected re-awakes and steadily strengthens the invariably somnolent will. Regularity in the hours of meals and of sleep also acts

[1] Möbius, *Schmidts Jahrbuch*, 1889.

favourably on the invalid's moral condition. He ceases to dally in the feeble inactivity and the meditation over his ills to which he is accustomed; little by little he regains confidence in himself, and he begins more and more to believe in the eventual cure of his malady.

Here arises the question if neurasthenics should abstain from all intellectual work, and, if not, in what measure and under what form it should be permitted to them. It is evidently impossible to formulate an absolute rule in this respect. The line of conduct to be followed in this matter naturally varies from case to case; it depends at once on the neurasthenic himself, and on the principal cause and even the form of his neurasthenia. Thus prohibition not only of mental work but even of all reading is indicated in the case of patients who have fallen into pure cerebrasthenia in consequence of exaggerated intellectual toil. These overdriven subjects grow quickly better under the influence of rest to the mind and of a sufficiently prolonged stay in the country, with the addition of walks and some physical exercises.

On the other hand, a patient who has become neurasthenic in consequence of disappointments or sorrows, may receive benefit from daily but moderate intellectual work. If he apply his mind for one or two hours every day to a subject of study that has sufficient attraction for him, he will find

in this practice an efficacious distraction from his sorrowful thoughts, and a means of breaking the course of his cares and painful agitations.

The majority of these invalids, with the exception always of those who are attacked by the serious form of neurasthenia, and who are consequently obliged to take complete rest of body and mind, should be permitted to devote an hour and a half at most each day to reading. The choice of books is sometimes very important, and certain invalids should be guided in their reading. This naturally requires on the part of the physician a thorough knowledge of the moral condition of his patient, of his tendencies and mental peculiarities, his character and his habitual preoccupations. Nor is the time of the day that the patient devotes to reading a matter of indifference; excitable neurasthenics, and more especially those who suffer from insomnia, should abstain from all reading in the hours before going to bed. During these same hours it is equally important that the sufferers avoid long conversations on subjects that touch them closely or that interest them too keenly. All these small measures of moral hygiene dealing with the intellectual work and the hours of mental rest and activity imposed on the patient, are often more efficacious than one would think, and the physician must take care not to neglect them when he comes to draw up for the patient the programme of the life

to be led during the period of the treatment.

Independently of reading, there are some distractions that must not only be permitted but even recommended to certain neurasthenics. Drawing, photography, and music divert and enliven these patients, especially when they have acquired some skill in the exercise of these accomplishments, and can derive from them a sensible satisfaction of their self-esteem. But in this, as in all things, it is important to proceed with moderation, and to avoid excess and above all fatigue.

There is a rule of mental hygiene whose importance seems to us very great, but which, unfortunately, is often very difficult to apply in every-day practice: we refer to the choice of the person or small number of persons with whom the invalids enter into daily contact and with whom they have to converse. It is not good for neurasthenics to live in solitude. They very often seek it out, and take pleasure in it, either because the presence of another person annoys their intellectual idleness and their apathy, or because it interferes with their day-dreamings, their broodings, and their hypochondriacal preoccupations. Consequently they should often, or rather always, be accompanied during their walks and their hours of rest by some intelligent and tactful person, either sick-nurse or friend, who knows how to interest them and distract them with conversation, but always without tiring them; this

is doubtless a very delicate part to play, but it is in the highest degree beneficial when it is well carried out. Hence it is necessary to prohibit formally to neurasthenics placed in special establishments, and so living in the immediate neighbourhood of other neurasthenics, the contact and society of those like themselves; the condition is necessary, but the practical realisation of it is, it must be recognised, often very difficult. On this point the physician cannot be too attentive or exercise too much supervision.

2. **Psychotherapeutical role of the Physician.—Hypnotic Suggestion.—Suggestion in the waking state.—Moral guidance and psychotherapy by means of reasoning.** (*Direct psychotherapy*).

In addition to the indirect psychotherapy of which we have just spoken, there is also direct psychotherapy, which comprises the sum total of the psychical measures which the physician may employ to act on the mind of the neurasthenic.

Before stating its precise nature and mode of employment, it is necessary to call attention to the fact that this psychotherapy, which, according to Grasset's excellent definition,[1] is treatment by psychical measures, is not one and single. It has various forms, among which the medical man will have to choose, and

[1] J. Grasset, *La Psychothérapie*, in *Revue des Deux Mondes*, 15th September, 1905. See also Bernheim, *Suggestion et Persuasion*, in *Revue méd. de l'Est*, 1905.

which it is as well to indicate at the outset.

Psychotherapeutic measures of procedure may practically be reduced to three: psychotherapy by *hypnotic suggestion*, that by *suggestion in the waking state*, and finally that by persuasion, which it is more rational to call *psychotherapy by reasoning*.

The first of these is applied by means of hypnotic sleep. We shall show that it is of little service in the treatment of neurasthenia, and that it has more disadvantages than advantages.

The second, suggestion in the waking state, consists, if one takes the term literally, in using the authority and tact that the physician has been able to acquire in such a way as to impress on the patient an idea, belief, or conviction that is opposed to the morbid idea, belief, or conviction.

As to the third, which has been much spoken of lately under the name of psychotherapy by *persuasion*, it has been contrasted with the second as being fundamentally different. It consists in reasoning with the patient, in discussing with him the causes and the symptoms of his complaint, in showing him the reason and the mental mechanicism of his sufferings, and in making him understand in what ways he is deceiving himself and how he is acting wrongly. The new designation that some authors have employed to denote this very old form of psychotherapy, seems to us bad.

Persuasion, in fact, is not a means but a result, or, if it be preferred, an aim. All psychical treatment, direct or indirect, and whatever be the form of procedure, aims at the persuasion of the patient. When one *suggests* to a hysteric whose hand is paralysed the idea that his paralysis does not exist, what one does is to *persuade* him by affirmation or, if the expression be preferred, by suggestion; and in the same way, when, by a long process of reasoning, one demonstrates to a dyspeptic who believes himself attacked by cancer that he is mistaken, one again succeeds by means of *persuasion*. The ways and means are different in the two cases, but the end is the same. Hence there is no psychotherapeutical method which can justly be termed psychotherapy *by* persuasion; and on the other hand every psychotherapeutical method may be described as a mode *of* persuasion. What has improperly been called psychotherapy by persuasion is really psychotherapy *by reasoning*.

Is psychotherapy by reasoning as different from psychotherapy by suggestion as has been said? Theoretically perhaps it is; and to a certain extent one is justified in saying, with Grasset, that the latter appeals to the lower mental levels, including unconscious, automatic, involuntary actions, whereas the former acts on the higher mental levels, to which belong conscious and voluntary actions. Hence it has been thought that "if the "two methods have both a curative psychical

"action, yet they differ from one another in that "the higher fortifies, and the lower weakens, the "unity and strength of the higher, conscious and "free personality."[1] This thesis has been developed at length by Dubois in his work, *Le Traitement des Psychonévroses*, and has been adopted by Pagniez & Camus in theirs. It is incontestable that pure suggestion, which involves the complete submission of the patient to the operator, is not calculated to develop the energy of the will, but tends rather to weaken it; and on the other hand, it is no less certain that by reasoning, which is a method of re-education, we may strengthen failing energy and bring out the personality of the patient. But in practice things do not go altogether in this way; reasoning and suggestion are almost always combined to a greater or less degree. And if one can in strictness imagine a suggestion in the waking state from which all logical elements are wanting, yet there is no persuasive reasoning that does not involve the intervention of suggestion in some degree. In every effort of re-education made by the physician, moral feeling enters into action in the patient's mind as well as intelligence. Bernheim has rightly said: "Is it true "that persuasion appeals solely and always to the "reason, and that it is as persuasive when it "appeals simply to the reason alone? The advocate, "the business man, the diplomatist, the earnest

[1] J. Grasset, *loc. cit.*, p. 35.

"preacher and moralist, do they not know that, "in order to convince and make an impression, "it is not enough to write or to deliver their "reasoning coldly? Gestures, the intonation "of the voice, the turning of sentences, the magic "of style, words that take effect, that is to say "that make an impression, all these unite to "drive the notion into men's heads, and to per- "suade them."[1] If this were not so, then the phonograph might often be substituted for the physician in the practice of psychotherapy. The foregoing leads us to express our belief that it is only artificially that one can, in practice, think of dissociating suggestive psychotherapy and psychotherapy by reasoning. Consequently we shall study them both in the same section, but we must state at once that, as a rule, more good is done to neurasthenics by an appeal to their intelligence than by an appeal to their feelings.

1. *Hypnotic suggestion.*—It is certain that the profound disorder of the nervous centres from which spring the groups of symptoms found in neurasthenia cannot be permanently and completely abolished by some few applications of hypnotism. Hence "the hypnotic method," so vaunted by some authors in the treatment of diseases of the nervous system, and notably of neuroses, cannot be reasonably proposed as a mode of general treatment of neurasthenic

[1] Bernheim, *loc. cit.*, p. 6.

conditions. All medical men who have watched the course of cases of neurasthenia, and have observed the habitual tenacity of the complaint, will agree in recognising this. On the other hand, it is certain that hypnotic suggestion can be of real service when it is put into operation to combat this or that incidental symptom of psychical nature arising in the course of nervous exhaustion (obsessions, phobias, etc.). Thus M. Bernheim, M. V. Elden, M. Forel, and many others have obtained either the improvement or the disappearance of such neurasthenic symptoms as cerebral depression, hypochondriacal preoccupations, insomnia, etc. But here it is necessary to come to a clear understanding as to the meaning of the terms "hypnotic state" and "hypnotic suggestion." According to our experience, pure neurasthenics, that is those who have no taint of hysteria, are not hypnotisable in the strict sense of the word. The states of sleep into which they are put by the various procedures employed in such cases do not in any way exhibit the essential features of somnambulism—unconsciousness, forgetfulness on waking, etc.—and similarly the suggestions given in these states of sleep are not carried out with that perfect automatism, that unconsciousness, that independence of those personal ideas whose combination constitutes the conscious self, which are the distinctive features and necessary characters of suggestion properly so called. This hypnotism

and these suggestions can only be brought about in the case of hysterics and hystero-neurasthenics. In order that they may be possible, there must be a profounder alteration of the personality than exists in pure neurasthenic states, and this perhaps is one of the most certain lines of demarcation between the mental state of the neurasthenic and that of the hysteric. Hence there will rarely be a chance of obtaining true hypnotic sleep in neurasthenic subjects. Besides, there is some danger in accustoming the patients, in training them so to speak, to induced somnambulism; we could here quote more than one case where such a practice has only aggravated the neurotic condition, and even where it manifestly determined the appearance of mental disorders of real gravity (wandering and confusion of the mind). The "sleep" to which neurasthenic subjects are usually put, and which corresponds to the first stages of hypnosis, according to M. Bernheim's classification, is very different from true artificial somnambulism. The patients do not lose consciousness of themselves; they know what is taking place at "the séance," though they close their eyes and are willing to abstract their minds and to sleep. They sleep awake. Thus when, after the "waking," they obey the suggestion-like instigations given to them verbally by the physician, it is not in virtue of a real unconscious and involuntary suggestion that they act. The mental

phenomenon produced in them has only the appearance of suggestion; it is really quite different. The command given has been received by them in full consciousness; it has not escaped from the control of their personality. And if they are docile subjects, convinced of the intellectual superiority of the physician, quite disposed in consequence to obey him, and vividly impressed by the word "hypnotism" and by what they know of the thing, it is easy to understand that they accept and carry out the "suggestion" that has been given to them. But this suggestion is, on ultimate analysis, only a suggestion received in the waking state, facilitated perhaps by the belief of the invalid in the efficacy of this mode of treatment and by the ceremonial associated with it; it is, in sum, equivalent to the indirect suggestions that may be produced by any of the therapeutic agents employed in the treatment of neurasthenia, such as electricity, metallic plates, etc. This kind of hypnotism presents no great dangers. It is certain that it has been able to render real services, to bring about for example the abolition of some psychical disorder that has arisen in the course of nervous exhaustion. But the cases in which it is indicated seem to have been always somewhat rare. One can usually do without it. The results that it gives can be obtained by a physician of some slight ability by appealing either to the intelligence, or to the

suggestibility, of the patient in the waking state.[1]

2. *Suggestion in the waking state. Moral guidance.—Psychotherapy by reasoning.*—The moral influence that the physician can exert on the patient is a leading element in the treatment of nervous exhaustion. Its importance assuredly cannot be exaggerated. By itself it is able to modify profoundly the mental condition of the patients, to arouse their energy, to hinder the development or effect the disappearance of the hypochondriacal ideas, the obsessions, and the fits of anxiety by which they are so often tormented, and thereby to produce a permanent improvement in their physical condition; for very often, as we have seen, it is from the moral state that the greater number of the symptoms of nervous exhaustion proceed.

In order that the success of this psychical treatment may be assured, and that the cheering action, by means of suggestion, of the physician on the patient may be possible and efficacious, it is absolutely necessary that the physician be able to gain the confidence of his patient and assume an uncontested authority over him. For this purpose he must at the very first interview listen patiently and with apparent interest to the sometimes very long recital of the troubles experienced by the neurasthenic, read attentively or

[1] M. de Fleury, *Traitement rationnel de la neurasthénie.—Congrès pour l'avancement des sciences.* Besançon, 1893.

keep for future examination the "slips of paper" on which the latter has recorded the list and analytical statement of his sufferings, and finally make a methodical and complete physical examination. It is advantageous also that, in the course of the interrogatory, or while the patient is giving a description of his case, the physician should make suggestions or anticipate him, so to speak, in his statement, by indicating this or that symptom or by mentioning the precise features of this or that functional disorder. Feeling himself thoroughly examined, listened to, and understood, the patient is thenceforward ready to regard as sincere and correct any opinion that the physician may formulate on the nature of his complaint, and consequently to accept unreservedly the treatment prescribed to him. The physician who wishes to secure the confidence of a neurasthenic must, then, listen to him attentively, examine carefully all his organs, and above all refrain from any bantering, from any ironical reflections, however strange may be the complaints or confidences that he receives. When this first point is gained, that is to say when he has acquired the confidence of the patient, the physician will thenceforward be able to reassure him authoritatively as to his condition by declaring to him, not that he is not really ill or that he is only a "malade imaginaire" but that he has no organic lesion, and that consequently his illness, though demanding serious and

perhaps prolonged treatment, is perfectly curable. He can quote him examples of patients who have been cured, and, in short, try to awake in him the hope and even the belief in a speedy cure. This is, so to speak, the basis of the moral treatment of neurasthenia.

During the whole course of treatment the physician should, then, by his words and his bearing endeavour to keep up in the patient's mind the notion that he is not a prey to a serious malady, that his disorders are purely functional, and that with perseverance he will succeed in getting rid of them. By acting in this way he not only helps to dispel erroneous hypochondriacal ideas, but he raises the patient's courage and thus produces stimulating effects that aid in dispelling the nervous exhaustion and its manifestations. Nothing stimulates activity like a comforting thought or a pleasant impression.

In order to obtain this result it is evidently indispensable to watch closely over the patient, so that on the least sign of discouragement or impatience one may intervene and restore matters to order. And yet it is advisable that the physician should avoid seeing his client too frequently; otherwise his authority runs the risk of wearing itself out and his influence of crumbling away: he should know how to put suitably long intervals between his visits. It is good that the arrival of the physician should be somewhat desired; it ought

always to be a sort of conspicuous event for the neurasthenic under treatment, and one that makes an impression upon him. Hence, again, the physician should never yield to the temptation to adopt too familiar a tone with the patient; his attitude ought not to be made up of commiseration and good-natured attention only; firmness is also necessary, and sometimes even a little severity. The patient needs to feel that the doctor has a superior judgment, and a firm will which directs him and which may be a solid support to him in the moral reformation that he is unable to carry out himself. In this connection M. Bouveret has very justly remarked that what M. Legrand du Saulle so well said about mild insanity is in all points applicable to the treatment of a certain number of neurasthenic states. "If the patient "only receives common-place consolations, and if "he makes compromises with you on one or more "points, he goes away disappointed and never re-"turns. The essential thing that he relied on "finding in the physician was an authority that "commanded and subjugated his will, and not an "argumentative affability that discussed and "yielded."

These are very general indications as to the attitude that the physician should adopt with neurasthenics. But it is evident that his words, his actions, and the little stratagems that he must make use of, will vary according to the different

circumstances of the cases. Every case needs a special method, and is in a way amenable to special procedures of verbal suggestion. All who have had some slight practice among this class of patients know how much, in spite of very many points of resemblance, they really differ from one another in their tendencies, their sensitiveness, their character, their social level, and their degree of intelligence, all of which are conditions that require from the physician, if he is to conduct the psychical treatment well, the most varied modes of speaking and acting. Consequently, before undertaking the moral treatment of a neurasthenic, he ought to make a minute inquiry not only into his history, his hereditary and personal antecedents, but also into the persons around him, the circumstances in which he was attacked by neurasthenia, and the real causes, moral or other, of his nervous exhaustion. Similarly, when his special object is to counteract a fixed idea, a hypochondriacal obsession, he should contrive, by persuading the patient to confide in him, to trace it up to the incident and the morbid derangement that set the spark to it. He will then be in a position to show the invalid the emptiness of his fears, by making him understand that his attention is fixed on a disorder that is real but purely functional and without gravity, and that he has accustomed himself little by little to interpret it wrongly, to ascribe to it an importance that it

does not possess, a significance that is not the true one. This proceeding, which consists in retracing to the patient in a correct and precise manner the stages of his hypochondriacal ideas, and in some sort the genesis of his obsessions, is well calculated to impress him. We could quote many examples of the cure of fixed ideas by this method. But there is one condition necessary for its application, namely that the neurasthenic be endowed with a sufficiently lively imagination. When one has to deal with a neurasthenic of penetrating mind, having to some extent what might be called the gift of internal observation, one must not be afraid of giving him information, of enlightening him upon the subject of his affection, and of making him put his finger, so to speak, on the starting point and the evolution of the obsessions, the apprehensions, and the terrors that torment him. That, we believe, is a good method of freeing him from them. It is obvious that a quite different line of conduct must be followed in the case of subjects less well endowed intellectually. In such cases it is better to have resource to procedures of suggestion or indirect demonstration, of which we cannot, of course, draw a complete picture here. But let us take an example: here is a neurasthenic who, in consequence of having felt some pains and a certain degree of weakness in the lower limbs, imagines that he is attacked by a serious disease of the spinal cord, say by

tabes dorsalis; he can be shown that he exhibits none of the fundamental symptoms of that affection, that his sensory powers are intact, that shutting his eyes does not bring on loss of equilibrium, that his knee-jerks are preserved, and that his pupils are equal and react properly.[1] Claustrophobia, the fear of open spaces, in short, all the phobias in their milder forms are amenable to more or less analogous treatment, into details of which, however, we cannot enter here, because the modes of practical application are, we repeat, of the utmost variety. The action of the physician with regard to the moral causes that are found so often at the origin of neurasthenic states is of the greatest importance; but this also cannot be given in precise terms. The conduct and the language that must be held in order to appease poignant regrets and profound sorrows, and to bring the patient to live, so to speak, in peace with himself, are evidently very special in each case. This is one of the most delicate parts of the rôle of the physician, and it exacts from him much initiative, prudence, and tact, and at the same time an intimate acquaintance with the history and the personality of the patient.

1 It must be remembered, however, that a slight loss of equilibrium on closing the eyes is not uncommon in neurasthenia, that the pupils may be unequal, and that the knee-jerks are occasionally, though rarely, absent. Moreover the statement that the sensory powers are intact is too absolute.—*Trans.*

In the case of patients endowed with intelligence, one may also with advantage have recourse to the methods of *auto-suggestion* that have been studied and recommended by Dr. P. Emile Lévy.[1] The method of *meditation* is able to render real services. "One places oneself," says Dr. Lévy, "in a quiet room, away from disturbance, noise "and light. One lies down in a comfortable "position, wearing nothing that can incommode "the body. In short, one puts oneself in the "same conditions that help us to fall asleep at "night. Then we shut our eyes, and concentrate "our minds on the thought of sleeping. . . . "At a certain moment we experience a feeling "of torpor and calm in our minds and bodies; our "ideas and sensations are dulled, veiled as it "were. . . . We then give ourselves suitable "suggestions. These affirmations are made for "the length of time that we judge necessary, "sometimes mentally, but often, and better still, "aloud or half-aloud, in order that our attention "may be more easily taken possession of. On occa-"sion we may even enlist the aid of move-"ments; we may touch ourselves, or lightly rub "the painful part. . . . When the suggestion "is finished, all we have to do is to open our eyes."

From what has been said it will be seen that, though psychotherapy is of great use to neuras-

[1] Paul Émile Lévy. *L'éducation rationnelle de la volonté.* Paris: Alcan, 1905.

thenics, it cannot be brought under a single unchanging formula. The good doctor is not he who has a system of his own, and applies it to all cases empirically, but he who is able to distinguish special indications, and to adapt his treatment to the individual psychology of each patient.

CHAPTER III.

DIET.

The diet of the neurasthenic should have a triple aim: (1) to restore to the nervous system its failing energy; (2) to adapt itself to the needs of the more or less atonic stomach; (3) to adapt itself to the requirements of the intestine, whether this be in a state of atony, of spasm, or of irritation. The number of these indications, which are often enough in contradiction with one another, throws substantial difficulties in the way of establishing a satisfactory regimen. The cases are frequent in which the general condition is poor and would require an abundance of rich nourishment, but gastric dyspepsia necessitates the restriction and the selection of foods. Again, the diet that suits gastric atony is not always that best adapted to intestinal atony, which so often accompanies it. Hence the physician is obliged to manœuvre, so to speak, and to prescribe a regimen in accordance with the predominant indications. From what precedes it may be gathered that there is not *a* diet for neurasthenics, but there are diets. Here as elsewhere,

charlatanism and the spirit of systematising have doubtless given themselves free scope; there are medical men who have *their* diet for neurasthenia. What we have said will suffice to show how opposed to clinical medicine these practices are, and how they are worthy of the advertisement sheet of a newspaper rather than of serious medical books. It is a tautology, but one which it is not needless to recall, that, in order to practice medicine, the best thing is to be a medical man, that is to say to look for the indications special to each case and try to fulfil them. Since the time of Hippocrates medical men worthy of the name have acted in this way, whereas, also since the time of Hippocrates, charlatans have had *their* method, *their* remedy, *their* system.

Consequently we shall not set forth here *our* diet for neurasthenia, but shall briefly point out how and in what degree it is possible to fulfil the indications enumerated above.

I.

Diet as a Reconstituent of the Nervous Energy.

For the laying down of a diet that is perfectly rational from this point of view, several conditions are necessary.

(1). It must be known precisely what the nerve cell absorbs and what it gives out again, both in the state of rest and in that of activity; in

other words the phenomena of its nutrition in the static and dynamic states must be known.

(2). The exact changes undergone by the different foodstuffs while passing through the organism must be known; and, taking these changes into consideration, a determination must be made of the quantity and quality of those articles that have to be absorbed in order to carry on the work of the nervous system.

We are far from such exactitude. To speak truth, we are almost totally ignorant of the data which would enable us to consider in a practical manner the problem as we have put it. Because the nervous matter of the cortex contains phosphorised fats (cerebrin and lecithin) in its composition, it has been thought that the administration by the mouth of foods or drugs containing phosphorus would be able to restore his energy to the neurasthenic. Empirical observation has not altogether invalidated this notion; but we have still to find a phosphorised substance which is undoubtedly assimilated by the nervous matter, and of which it can be said with certainty that it influences the nutrition and the functioning of that matter.

If medical men have been led to lay down a tonic dietary for neurasthenics, it is because it is supposed, and not without reason, that nervous asthenia is connected with general denutrition, and that restoration of the physical health must remedy the insufficiency of nervous energy. This

view is supported by the facts so well observed by Weir Mitchell and confirmed by all observers. It must not be forgotten, however, that neurasthenics are far from being always anæmic and emaciated invalids; there are some whose external appearance is, on the contrary, very satisfactory This proves that if nervous asthenia is often associated, either as effect or as cause, with a certain degree of organic wasting, it may on the other hand be quite independent of it.

There is more than this: on no account should one lay down at the outset to all who show signs of neurasthenia (persistent headache, rachialgia, lassitude, attacks of vertigo, loss of brain power) the tonic treatment that suits only some of them. It is important to examine the patient first with great attention, in order to make sure that the case is not one of those states of secondary neurasthenia that require quite different treatment.

Indeed, neurastheniform symptoms may be due to disorders, either of nutrition or of certain functions, which would only be aggravated by the diet indicated in the case of true neurasthenics.

This is what happens, for example, in the case of many arthritics, either with or without increased arterial tension. These patients suffer from auto-intoxication, and the hyperacidity of the organic fluids necessitates a diet moderate in amount, and of which meat and albuminoids in general should form only a small proportion. It

was evidently cases of this kind that were studied by those physicians (Vigouroux & Gautrelet) who recommended feeding neurasthenics on carbohydrates rather than on proteids. This practice is certainly legitimate in the special cases of which we are speaking. If extended to all neurasthenics, to the true neurasthenics for example, it would be disastrous. This shows again the necessity of a good diagnosis beforehand in order to carry out good treatment.

What has just been said about neurasthenics from arthritic auto-intoxication applies also to those suffering from hepatic neurasthenia (Glénard, Lagrange); in these cases the diet must be directed in the first place to the liver.

Thus it is only when a careful clinical examination has shown that the case is not one of those secondary neurastheniform conditions of which we have just spoken, but one of true neurasthenia, that we must concern ourselves with the restorative powers of the dietary. We have already said that our knowledge on this point is very vague and inexact. The important thing at least is that the nutritive value shall not be inferior in the case of these patients to what it is in the case of healthy men. It will be well to recall summarily what physiology teaches us in this matter.

It is well-known that foods are divided into three categories: nitrogenous, fatty and carbohydrate

(starch and sugar); to these must be added salts and water, of which we shall speak later.

a. Nitrogenous, fatty and carbohydrate foods.—The function of nitrogenous or albuminoid food is partly to build up the framework of our tissues; fats, carbohydrates, and part of the albuminoids serve to produce heat and energy. A good diet is one which includes these three classes of foods in the ascertained proportions, and man is instinctively led to use such a mixed diet.

According to A. Gautier,[1] whose figures correspond with those given by other authors, the following are the daily quantities needed by an average adult man of the European and North American races in order to maintain himself in good health, without allowing for more than a minimum quantity of work, or none at all:

Proteids	4 oz.
Fats	2½ „
Sugar or starch (of which one fifth part may be replaced by half its weight (1½ oz.) of alcohol)	15 „

In the case of a man who is engaged in severe muscular work, these figures are notably increased. There is then needed, again following Gautier:

Proteids	5½ oz.
Fats	3 „
Carbohydrates	22¼ „

[1] A. Gautier, *L'alimentation et les régimes*, Paris, 1904.

A medium amount of activity requires intermediate quantities of food. It is obvious that these figures vary more or less with age, height, sex, and season.

The three classes of aliments are indispensable to health. Life cannot be maintained on proteids exclusively, at least for long, nor on fats or carbohydrates exclusively. But there is no disadvantage in the substitution, to a certain extent, of one class of food for another, for example of carbohydrates for fats or *vice versa*. Fatty and carbohydrate foods, and a large part of the nitrogenous food, play the part of combustibles in the bodily economy. Now one combustible may be replaced by another. Hence a common unit has been sought for, which shall be applicable to the three classes of foods, and shall enable us to arrange diet scales without reference to the share taken by each of the three; this common unit is the *unit of heat* or *calorie*. It is well known that the calorie is the quantity of heat needed to raise one kilogramme of water one degree Centigrade.[1]

On the other hand, Rübner's researches have established that—

1 oz. of proteid is equivalent to 116 calories.
1 „ fat „ „ 264 „
1 „ carbohydrate „ 122 „

From which it appears, on multiplying the figures given above by these coefficients, that a

[1] That is, to raise 1 lb. of water 4° Fahrenheit (nearly).—*Trans.*

male adult leading a life of rest needs to absorb an amount of aliment capable of furnishing about 2,800 calories; a man at work needs much more, namely from 3,500 to 3,800; and a woman at rest much less, 2,000 to 2,200.

It follows from these data that a neurasthenic who, from loss of appetite, sluggishness of the stomach, difficulty of digestion, or any other cause, ingests an amount of nutriment equivalent to less than 2,800 calories, or to less than 4 oz. of proteids, 2½ oz. of fat, and 15 oz. of carbohydrates, is being insufficiently fed, and is likely to see his asthenic condition persist or grow worse rather than improve.

In practice, it is certainly not necessary to make a habit of dosing the patient's food in this minutely accurate way. It is important, however, not to depend solely on his statements as to the sufficiency or insufficiency of what he takes; and one ought to have a measure which may serve as a standard, in order to gain a precise notion of the quantity ingested. For this purpose recourse must be had, (1) to the occasional weighing of the food, (2) to the weighing of the patient, and (3) to the analysis of the urine.

From time to time the various foods taken by the patient should be weighed for two or three successive days, in order to arrive at an average; and the liquids consumed should be measured, or at least the nutritious liquids, such as milk and

chocolate. In this way it will be easy to learn—very approximately—not only the total weight of food taken, but also that of the albuminoid, fatty, and carbohydrate substances separately. All that is needed for this purpose will be to consult tables that give the composition of each kind of aliment. We have drawn one up here after the researches of König, Moleschott, Balland & Gautier. It shows the composition of the most frequently used articles of diet in terms of proteid, fatty and carbohydrate substances.

COMPOSITION OF THE PRINCIPAL ARTICLES OF DIET.

In 100 parts by weight of	Albumen.	Fat.	Carbohydrates.
Bread (fresh wheaten) ...	7·0–9·3	0·85	46–55
Beef (average)	20·96	5·41	0·46
Veal (average lean)	19·86	7·70	0 41
Mutton (average)	17·11	5·77	—
Pork (average lean)	20·25	6·81	—
Ham	15·98	34·62	—
Chicken (fat)	18·49	9·34	1·10
Turkey (average)	24.70	8·50	—
Goose	15·91	45·59	—
Pigeon	22·14	1·00	0·76
Hare	23·14	1·97	—
Rabbit	21·47	9 76	0·75
Venison (roe-deer)	19·77	1·92	1·42
Partridge	25·26	1·43	—
Thrush	22·19	1·77	1·39
Salmon	21·60	12·72	—
Herring (fresh)	14·55	9·03	—
Mackerel	19·36	8·08	—
Shad	18·76	9·43	—
Dab	18·71	1·93	—
Sole	17·26	0·81	—
Carp	15·71	4·77	—
Trout	17·52	0·74	—
Skate	22·08	0·45	—

COMPOSITION OF THE PRINCIPAL ARTICLES OF DIET.—*Continued.*

In 100 parts by weight of	Albumen.	Fat.	Carbohydrates.
Eggs	12·55 (about 92 grains per egg)	12·11 (92 to 107 grains per egg)	0·53
Meat broth	0·75	—	0·14
Cow's milk	3·66	3·62	4·48
Cream (from cow's milk) ...	3·76	22·66	4·23
Butter (Normandy)	0·80	86·40	0·18
Potatoes	1·30	0·15	20·00
Dried beans	13·80	1·95	52·90
Peas	23·15	1·89	52·70
Lentils	20·30	2·40	56·00
Asparagus	1·79	0·25	2·63
Cauliflower	2·48	0·34	4·55
Carrots	1·23	0·30	9·17
Spinach...	3·49	0·58	4·44
Barley meal	11.38	1·53	71·22
Oatmeal	9.65	3·80	69·55
Rice flour	5–6·4	0·8–4	78–83
Cheese (Gervais)	14·32	43·22	—
,, (Brie)	18·97	25·87	0·83
,, (Gruyère)	29·49	29·75	1·46
,, (Dutch)	28·21	27·83	2·50
Apples	0·36	0·82 (Free acids)	7·22
Greengages	0·41	0·91 (Free acids)	8·24
Peaches	0·75	0·92 (Free acids)	13·65
Apricots	0·49	1·16 (Free acids)	10·00
Cherries	0·67	0·91 (Free acids)	10·24
Pears	0·36	0·20 (Free acids)	11·80
Strawberries	0·54	0·93 (Free acids)	7·00
Grapes	0·60	— (Free acids)	14–22

But we must not lose sight of the fact that the nutritive value of foods is not in exact correspondence with their composition. Not to mention the elaboration undergone in digestion, which varies with the healthiness or the disorder of the gastric and intestinal functions, we must take into account the waste matters that are not

absorbed but are rejected in the stools; these vary in the case of different substances, even when the stomach and intestine function normally. If we did not take into calculation the *coefficient of utilisation* of the different foods, we should make gross errors in our estimates. In 100 parts by weight of lentils there are 20·3 parts of proteids, and 58·4 of fats and carbohydrates; hence one might infer that lentils are more nutritious than average beef, which gives on analysis 20·96 per cent. of nitrogenous matter and 5·87 of fats and carbohydrates. This deduction would be quite erroneous, for whereas the coefficient of utilisation of beef is 97·5 per cent., that of lentils is only 60 per cent., the latter leaving residue amounting to 40 per cent. in the stools, while beef leaves only 2·5.[1] This shows the importance of taking into account the coefficient in question.

According to Rübner, 5·5 per cent. of the organic matters of an average mixed diet are excreted in the stools. Gautier, to whom we are indebted for this information, considers the figure too high; according to him, it should not be perceptibly above 4·5 to 5 if the diet is good and digestion normal.[2] In reality such complete diets as milk, meat, bread, and butter, or meat, potatoes, flour, peas, butter, and cheese, which correspond nearly to the customary fare of workmen, give a

[1] This still leaves a balance in favour of lentils, if proteids, fats and carbohydrates be added together.—*Trans.*

[2] A. Gautier, *op. cit.*, pp. 40 seqq.

total utilisation value varying from 95 to 87 per cent.

We borrow from Gautier the following table, which shows the coefficient of utilisation of the commonest articles of food, in so far as their proteid constituents are concerned.

	Percentage of proteids utilised.	Residue.
Beef - - - -	97·5	2·5
Fish - - - -	97·3	2·7
Milk (casein) - - -	91·7	8·3
White bread (gluten) -	78·9	21·1
Whole meal bread (gluten)	58·7	41·3
Lentils (legumin) - -	60·0	40·0
Peas (legumin) - -	72·2	27·8
Haricot beans (legumin) -	69·8	30·2
Rice (gluten) - - -	75·0	25·0
Potatoes (legumin) - -	78·0	22·0
Cabbage (legumin) - -	81·5	18·5

This is not all. It must be remembered that proteids are not absorbed in their natural state, or at any rate without preliminary chemical modifications. They first undergo a process of dissociation, and are reduced to more elementary albumens. Then a second process takes place, this time of reconstruction, which modifies these albumens again and renders them identical with those of which our bodies are composed. The more the nitrogenous substance resembles those of our tissues, the more easily is this double

series of operations carried out. It appears certain that it is more easy and complete in the case of the albumen of meat than in that of vegetables. Thus the chemical composition of the different foods does not give us the exact measure of their nutritive value.

It was necessary to recall these data as a caution against the error of believing that it is enough to know the weight and composition of substances introduced into the alimentary canal, in order to calculate the exact quantity of those which are absorbed and which serve either to build up the tissues or to produce the necessary calories.

Information derived from the nutritive value of the food consumed will give only approximate indications. It may usefully be supplemented by the results of weighing the patients. It is advantageous to weigh them from time to time, at fixed, if not very short, intervals. Thus it can be learnt if they are putting on flesh, remaining stationary, or becoming thinner, knowledge which it is very useful to have when treating neurasthenics.

It must not be forgotten, however, that increase in weight cannot be regarded as a sufficient criterion of good nutrition of the nervous system. With an excessive proportion of fats and carbohydrates in his diet, the patient will grow heavier; but it is not proved that in such conditions

he will augment his nervous energy. Thus we must regard as defective those systematic régimes which are held in honour in certain establishments out of France, and which aim principally at fattening the patients.

The analysis of the urine, carried out at considerable intervals, also gives us information as to the nutrition which it is well to take into account. As a matter of fact, these analyses enlighten us only about the salts and proteids absorbed, as the fats and carbohydrates give rise to products of oxidation that are eliminated by the lungs and not by the kidneys. Doubts have been thrown on the significance of the figures indicating the absolute amount of the salts and the various products of proteid transformation in the urine (urea, uric acid, etc). It has been said that what is important to know is not so much the quantity of phosphorus, sulphur, and nitrogen eliminated, as the form under which they are eliminated, and it has been proposed to substitute the method called that of coefficients for the simple quantitative estimation of these different substances. Thus, for example, instead of estimating all together the total nitrogen of the urine, one estimates this total nitrogen on the one hand, and on the other hand the nitrogen of the urea. The ratio between these two figures $\left(\frac{\text{Nitrogen of the urea}}{\text{Total nitrogen.}} = \frac{UN}{TN}\right)$, which in the normal state is about 0·85 on an average, and which has been called the *nitrogenous*

coefficient, is said to show, by its variations, modifications of the nutrition as to which no exact information is given by the quantities considered separately. Now we are far from being sufficiently informed as to the value of this coefficient, and of several others that have been proposed. From our present point of view they have but little interest. According to the researches of Marcel and Henri Labbé[1], the qualitative and quantitative relations that exist between the composition of the food and that of the urine enable us to affirm that, for the most part at least, the constituents of the urine do not come from the destruction of the tissues, but from the combustion of the aliments introduced into the body. According to these authors, the urinary excretion is, above all, the expression of the mode of alimentation.[2]

This shows that the absolute quantities given by analysis of the urine are able to give us more information than has recently been supposed as to the mode of alimentation of our patients and its sufficiency or insufficiency, at least so far as salts and proteids are concerned. We must

[1] *Presse médicale*, 13th July, 3rd Dec., 1904, 11th Feb., 1905.

[2] According to Prof. Halliburton, "probably in a man excreting 16 grammes of nitrogen daily . . . . only a quarter of this or even less represents tissue breakdown." The chief end product of nitrogenous food katabolism is urea, but a small part of this is derived from the tissues. The chief end product of nitrogenous tissue katabolism is creatinine, others being uric acid and the purin bases; but these again may be in part derived directly from the food. See *Essentials of Chemical Physiology*, 6th ed., 1907.—*Trans.*

remember however that the residues of the various substances burnt up in alimentation are not all eliminated with equal rapidity, and hence it is well not to content ourselves with a single analysis of the urine, but to make it either on three successive days or at least twice with a day's interval. We must observe if the quantities of each constituent found in these analyses are similar to or different from the daily averages in the case of a normal man on an ordinary diet; these averages are usually given in tables of urinary analysis.

By combining the information furnished by weighing the solid food and measuring the liquids, with that given by weighing the patient and by analysing his urine, we will succeed in gaining statistics as to the sufficiency or insufficiency of his diet, at least so far as we are justified, in our present state of ignorance about the conditions of the nutrition of the nervous system, in considering a diet which is usually enough for the general needs for the organism as being sufficient for a neurasthenic.

The insufficiency of certain dietaries recommended to patients, or adopted by them of their own accord, becomes manifest as soon as they are submitted to the above criteria.

Let us see, for example, what we are to think of an exclusive milk diet from this point of view.

A thousand parts of unboiled cow's milk contain about :—

Water	861·3
Casein and albumen	49·0
Fat (butter)	40·0
Sugar of milk	55·0
Salts	4·0

From this it will be found that 5 pints of milk, the average daily quantity allowed, contain :—

Albumen	4·9	oz.
Fat	4·0	„
Carbohydrates	5·5	„

On comparing these figures with those of the average normal diet required for maintenance, which we have given above, it will be seen that 5 pints of milk contain :—

Too much albumen	4·9	oz.	instead of	4·0
Too much fat	4·0	„	„ „	2·5
Too little carbohydrate	5·5	„	„ „	15·0

Thus a milk diet is defective through insufficiency of carbohydrates and excess of fat. It is true that these defects may be remedied to some extent by skimming part of the milk and adding a certain quantity of cane-sugar or sugar of milk.

Moreover, it must not be forgotten that from the point of view of the calories produced, an excess of fat, if it is well digested by the stomach,

may be substituted for the deficiency in carbohydrates. If we hold this view, we may regard 5 pints of milk as yielding the following calories:

Albumen - -	116 × 4·9 =	568
Fat - - -	264 × 4·0 =	1056
Carbohydrates -	122 × 5·5 =	671
		2295 calories

This would be nearly[1] enough for a patient at rest, even allowing for the loss produced by wastage in the intestines. But the equivalence of the three kinds of food-constituents is in some respects theoretical, and a diet cannot be good, if it is prolonged, unless it has these in the relative proportions required by a normal maintenance-diet. Hence a milk diet would be insufficient for a neurasthenic at rest, if it were maintained for a length of time; and much more would it be insufficient for a neurasthenic at work. In the latter case, the quantity of food ought to be increased, and then there would be an excess of proteids as well as of fat.

As another example of an insufficient and imperfect diet, we shall take one of those that are in fairly frequent use among the richer classes.

It may consist, for example, of the following (Diet B):

[1] I have added the word *nearly*. In the original, the amount of the usual milk diet is given as 3 litres, yielding 2428 calories; and this, it is stated, would be enough for a patient at rest.—*Trans.*

	Albumen.	Fat.	Carbo-hydrates.
Breakfast: 10 oz. milk -	0·5	0·4	0·5
Lunch: 2 eggs - -	0·4	0·5	—
4 oz. meat -	0·7	0·2	—
4 „ peas -	0·8	0·1	2·4
1 „ cheese -	0·3	0·3	—
Dinner: equivalent to			
lunch, giving - -	2·2	1·1	2·4
Add 10 oz. bread - -	0·7	0·1	5·5
	5·6	2·7	10·8

This constitutes a diet too rich in albuminoids and too poor in carbohydrates.

The *graphic method* enables us to see the defects of a diet at a glance. It was devised by Alfred Martinet,[1] who has made a happy use of it to represent the proportion of nutritive principles in different articles of food. The diagrams that we propose to use are a modification of those of Martinet.

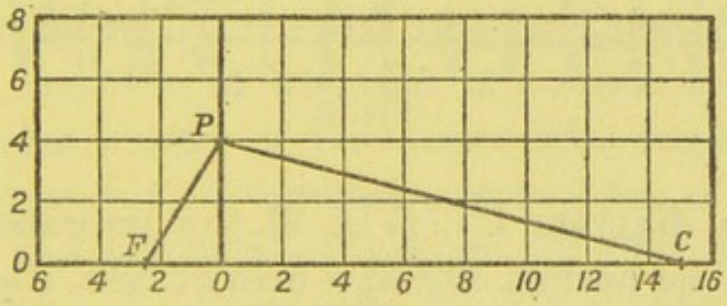

Fig. 4.

Diagram I. (Fig. 4) represents the normal diet of a man at rest. On the ordinate, at P, is

[1] A. Martinet, *Les aliments usuels*, Masson, Paris, 1906.

marked the quantity of proteids taken in 24 hours; on the abscissa, to the left of O, F shows the amount of fat; and to the right, C represents the carbohydrates. [Quantities are given in ounces].

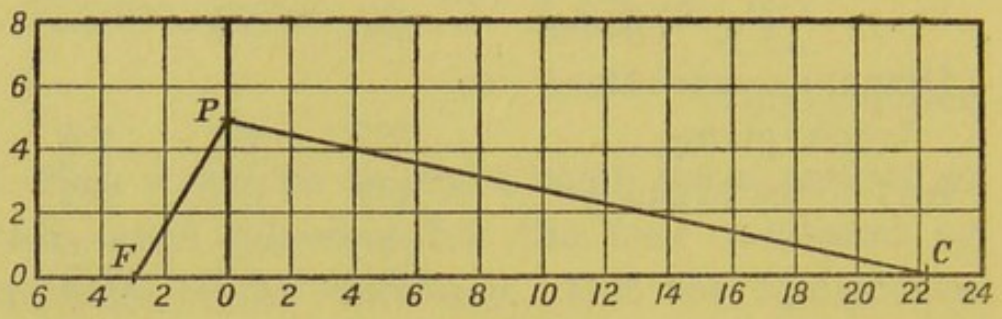

FIG. 5.

Diagram II. (Fig. 5) indicates the diet of a man at work.

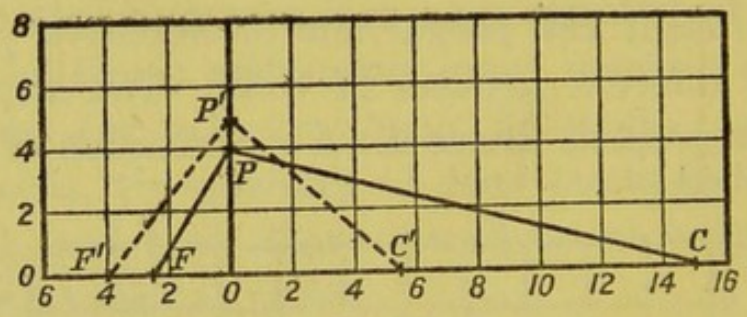

FIG. 6.

In diagram III. (Fig. 6) the unbroken line shows the normal diet of a man at rest, while the dotted line represents the ingesta of a person taking 5 pints of milk daily. The diagram shows at a glance the excess of proteids and fats in the latter case, and the deficiency of carbohydrates.

Diagram IV. (Fig. 7) represents diet B (p. 227), again contrasted with a normal diet.

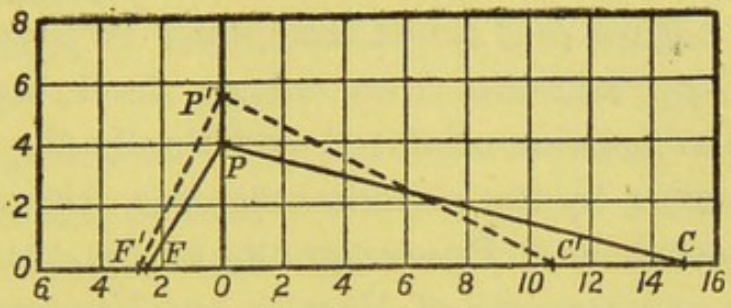

FIG 7.

We think that this method of representation, which appeals to the eye, may be of use. It will always be easy to construct the diagram of a neurasthenic's diet, if the weighings that we have recommended be carried out from time to time; and, by comparing this diagram with that of an average normal diet, it will be seen if the diet in question is satisfactory or defective.

b. The salts of food. We eliminate every day, by the urine, the sweat, or the fæces, an average of 400 grains of mineral matter, about half of which consists of chloride of sodium, and the remainder chiefly of phosphate and sulphate of potassium, and, in smaller proportions, of phosphate and sulphate of sodium, of lime and of magnesia. To these salts must be added some tenths of a grain of iron and silicon, and some thousandths, or ten-thousandths, of a grain of arsenic, copper, manganese, iodine, bromine, and boron. These last elements are eliminated

principally by the desquamation of the epithelium or by the shedding of the hair (A. Gautier).

These mineral elements form an integral part of our organs and fluids, and must be present in our diet; animals from whose food they are excluded become etiolated and finally die, as has been shown by the experiments, now already old, of Chossat and Boussingault, or by the more recent experiments of Forster and Kemmerich.

They are, moreover, very unequally distributed among the different tissues. Fresh nerve tissue, which is the one we are most concerned with, contains, according to Gautier, the following mineral constituents in 10,000 parts:

Chlorine	4
Phosphoric Acid	8·5 —14
Sulphuric Acid	1·4
Potassium	7·1 —21·2
Sodium	7·5 —13
Lime	0·3
Magnesia	0·65— 7·5
Peroxide of Iron	0·4 — 1·2
Carbonic Acid	2·1 — 3·3

But it is less important to know the proportion of mineral substances in the different tissues, than to know the amount of these substances eliminated daily; for it is the latter that shows us the quantity that must be brought into the system every day by the food.

Now in twenty-four hours the normal individual eliminates :—

Potassium	50 grains
Sodium	119 ,,
Lime	23 ,,
Magnesia	9 ,,
Peroxide of Iron	0·6 ,,
Phosphoric Acid	60 ,,
Sulphuric Acid	31 ,,
Chlorine	131 ,,

It is not possible to state, even with approximate precision, how much of this loss comes from destruction of nerve tissue. But the various dietaries to which neurasthenics may be submitted (milk diet, milk-and-vegetable diet, meat diet) contain, if we reckon the chloride of sodium added to them, a sufficiency of mineral constituents to render it unnecessary to take the trouble of estimating the exact amounts.

Nevertheless, the richness in phosphorus of the nervous tissue, which contains not less than 185 grains altogether, together with the increased loss of phosphoric acid or phosphates that some authors have found to occur under the influence of intense brain work (Byasson, A. Gautier), or in nervous conditions (Mairet, A. Robin), have led medical men to concern themselves with the amount of phosphorus in the diet of neurasthenics, and to introduce phosphates of various kinds into

the treatment of states of nervous asthenia.

Phosphorised substances are supplied to our economy either by animal foods, or by vegetable foods, or in a simple form as drugs.

Among articles of diet of animal origin, milk contains a notable quantity (one part of phosphoric acid in 2,000); eggs contain it in the form of lecithin (2 grains of phosphoric acid per egg). The compounds of phosphorus in eggs and milk are certainly very easily assimilated.

As to a meat diet, it is rich in nitrogen, but on the other hand, as Joulie has remarked, it is deficient in phosphoric acid. The case is different with vegetarian diets, which are poorer in nitrogen but richer in phosphoric acid. Thus it is to vegetables that we must turn for most of the phosphorus that we need, both in health and in disease. Cereals are a valuable storehouse of phosphorised products; they may be used in the form of bread, of flour boiled into a pap with milk, or in decoctions (Springer).[1]

Experiments that are already old have shown that if mineral phosphates in a simple form are administered to a milch-cow, the richness of her milk in phosphates remains unaltered; to increase this it is necessary to mingle these salts with the soil, so that the animal absorbs them by the intermediary of grass. As Boussingault has said, "phosphates, in order to be assimilated by the

[1] Or as milk-puddings.—*Trans.*

"organism, must be elaborated in a special "crucible, namely in some plant."[1] These facts lead us to doubt the efficacy of those phosphorised preparations of mineral origin, the pharmaceutical formulæ of which have been multiplied during these last years. To remedy their insufficiency an attempt has been made (by Gilbert and Posternak) to isolate from cereals an organic phosphoric acid (phytin), which has been thought to possess the properties of the natural phosphates of vegetables.

Whatever be of the value of these different pharmaceutial products, as to which clinical observation has not yet shown us anything decisive, it is from foods (cereals and legumes) that it is better to obtain, when one can, the phosphorised substances that are necessary to the nervous system of neurasthenics.

Some years ago Joulie recommended the use of simple phosphoric acid in nervous asthenia. Proceeding from the notion that the urine of neurasthenics is generally deficient in acidity, he had inferred that it is advisable to supplement the lack of organic acidity in these patients by the administration of an acid medicine; and it was as an agent capable of increasing the acidity of the fluids, rather than as a compound of phosphorus, that phosphoric acid seemed to him the best drug in neurasthenia.

[1] See A. Martinet, *op. cit.*, p. 20.

Joulie estimates the urinary acidity by a method devised by himself, and now employed in most chemical laboratories, and prescribes the drug in larger or smaller doses according as the deficiency in acidity is more or less marked.

It may be administered in the following ways:—

1. Crystalline Phosphate of Soda - 1 oz.
   Dilute Phosphoric Acid (B.P.) - 2 „
   Water to - - - - - 8 „

One to three teaspoonfuls at lunch and dinner.

2. Dilute Phosphoric Acid (B.P.) - - - - 2½ oz.
   Tincture of Lemon Peel - 5 fluid drachms
   Simple Syrup to - - 16 oz.

One to three tablepoonfuls in the course of the day.

In the hands of medical men, this acid medication has not given the good results foretold by Joulie, and if some (as Cautru and Martinet) have had reason to praise it, others have found it ineffectual.

We think that it should be reserved for certain special cases, but it is difficult to determine which are these cases, except by feeling one's way; for the criterion proposed by Joulie, which is based on the analysis of the urine and the degree of its acidity, seems to us to be insufficient.

c. It has been thought that neurasthenics might with advantage make use of certain aliments such as coffee, tea, kola, or even alcohol, which have been considered as furnishing energy (Gautier). These are stimulants which, if used habitually and in quantities, bring on depression subsequently to the stimulation. They should be allowed only occasionally and in small doses.

II.

The diet required in gastric disorders.

In some neurasthenics the digestive functions are carried on with perfect regularity. These invalids have a good appetite, and their gastric digestion is unimpeded; their general condition remains satisfactory; they do not lose flesh; and if questioned about the digestive disorders that they may justifiably be supposed to have, they reply positively that they have no derangement of the stomach, and that they digest without difficulty. Such patients are certainly rare, but they undeniably exist. In these cases the best plan is to let the invalid follow the diet to which he is accustomed, having first made sure, however, that the sensations of fatigue and prostration habitual to neurasthenics have not led him to increase out of measure his quantum of fermented liquors (wine, beer, etc.) or to make an immoderate use of spirits and such excitants

as tea and coffee. With this reservation, we believe that there is no advantage in trying to regulate the diet of these patients with a view to prevent the contingent appearance of dyspepsia. By acting in such a way one would run the risk of drawing the attention of the neurasthenic too strongly to his digestive functions, and of furnishing him gratuitously with a pretext for a new hypochondriacal idea. Besides, patients of this class usually support a change of regimen very badly, however perfect and rational it may be, at least in theory.

It is different with those subjects, and they are many, who exhibit the troubles characteristic of *the slight form of gastro-intestinal atony*. These are patients who after every meal experience the whole series of discomforts that marks nervo-motor dyspepsia : a feeling of weight at the epigastrium, distension, rushes of heat to the face, heaviness of the head, sleepiness, etc. These symptoms persist as long as the work of digestion continues, and vanish the moment that it comes to an end. In such cases one has to do with simple gastric atony; permanent dilatation of the stomach is absent, and there is no gastric stasis; the food is expelled from the stomach in the normal period of time. Finally, chemical analysis of the gastric juice shows that the secretion has not undergone any important qualitative modification; in some cases there is found a slight increase in the

amount of the hydrochloric acid, but nothing more.

What rules are to be formulated in such cases for the diet of the invalid ?

Certain authors think that there is no occasion for subjecting these neurasthenics to a special regimen, and that general treatment of the neurasthenia is enough to bring about the cessation of the dyspeptic troubles. This is sometimes true. There are certainly some slight forms of nervous exhaustion that improve rapidly under the influence of early and well managed treatment, in which rest and hydrotherapy form the essential part. One then sees the dyspeptic syndrome disappear along with all the other functional troubles, and one has the right to affirm, having put the matter to the proof, that local treatment was not necessary to cure the disorder of the digestive functions. But things do not always happen in this way; far from it. The neurasthenic condition often persists in spite of the general treatment prescribed; the dyspeptic troubles, slight at the onset, become more and more marked, and finally the patient passes from the slight to the severe form of gastro-intestinal atony; dilatation of the stomach and the phenomena of gastric stasis make their appearance, and sometimes interfere seriously with the patient's nutrition. It may further happen that the patient, although still exhibiting only the

slight form of atonic dyspepsia, may be so worn out by the persistence of the discomforts that overwhelm him at every period of digestion that he systematically limits the quantity of food he takes. There are even some who end by suppressing meals and substituting for them tiny quantities of soup or milk, so much do they fear the return of the dyspeptic attack. It is easy to understand that in such a case the patient, being insufficiently nourished, is not long in becoming anæmic and thin, and in growing steadily weaker.

There are, further, some neurasthenics on whom the tenacity of their dyspeptic disorders produces an unfortunate impression. They imagine themselves attacked by some grave gastric lesion, by cancer for example; being ceaselessly preoccupied with the condition of their stomachs, they grow gloomy and discouraged, and their neurasthenia is correspondingly aggravated.

Thus then nervo-motor dyspepsia, even in its slightest form, is not merely one negligible and commonplace symptom among so many other manifestations of nervous asthenia, since it may set the spark to a graver gastric disorder, and may seriously impair the general nutrition of the patient, either by leading him to lessen his food below the normal amount, or by throwing him into a state of profound moral depression. Hence it is necessary, while continuing to treat the general asthenia, to endeavour also to mitigate

the digestive disorders due to gastro-intestinal atony. This will be effected, not by prescribing digestive wines and powders, as is too often done, but by laying down a dietary appropriate to the patient's condition.

The alimentation of those neurasthenics with whom we are now dealing should be regulated with a view to preventing the development of digestive disorders, and insuring for the patient sufficient reparatory material to aid in the restoration of his nerve strength. The quantity of food must be kept at the normal level, or even a little above. Now we know that many neurasthenics whose stomachs are still quite able to digest (we are not speaking of those who fall into absolute anæmia and to whom Weir Mitchell's systematic treatment should be applied), accustom themselves to eat little. They ought to be carefully questioned on this point, and it ought to be ascertained with exactitude if the quantity of food taken each day is sufficient or not. In the latter case the daily amount of food ingested must be increased, not abruptly but slowly and progressively. Three meals should be advised, of which the principal should be taken at mid-day. Breakfast should be pretty substantial; it is generally too frugal, many neurasthenics contenting themselves with taking a cup of milk, tea, or coffee, sometimes without bread. This meal, though too small, is enough to revive them a little and to dispel,

though for a very short time, the sensation of fatigue or of depression that they experience on waking. Towards ten or eleven o'clock, however, the lassitude and prostration reappear, and last till lunch time. It is better that breakfast should be composed of half a pint of pure milk, or of milk with the addition of tea, coffee, or cocoa, according to the patient's taste, of a fresh and very slightly cooked egg, and of a little toast thinly spread with very fresh butter. After this light meal the patients generally pass the time till lunch without too much discomfort.

The diet must be *mixed*; this alone fulfils the conditions of good nutrition. Partial and exclusive dietaries are all injurious; they are only applicable in a small number of very special cases which we shall point out later. The general rule is to advise neurasthenics affected with simple atonic dyspepsia to take foods that are easy of digestion and that contain the maximum of nutritive material in the minimum of volume. The disorders that accompany digestion will thus be notably lessened, and the danger of a too prolonged stagnation of remnants of food in the gastric cavity, and of the fermentations that may result therefrom, will be avoided. The kinds of food recommended to neurasthenics should be sufficient in number to enable the patients to vary frequently their bills of fare, and thus to avoid the distaste that is provoked by exclusive diets:

they are—beef and mutton deprived of the fat and the fibrous parts, poultry, lean fish well cooked, fresh eggs slightly cooked. Milk must be taken in moderate quantity and must be reserved for breakfast.

Leguminous vegetables, such as French beans and peas, and also spinach, asparagus and all those green vegetables that are poor in cellulose and vegetable fibre, should be recommended. Their nutritive value is much superior to that of other vegetables; for they contain 22 to 24 per cent. of albuminoid substances, and a fairly high proportion of carbohydrates. Their only disadvantage is the great quantity of water that they contain.[1] Hence it is indispensable to cook them well and then to drive off the water by heat as much as possible before serving them. For the same reason preserved vegetables are sometimes better borne than fresh vegetables and should be preferred to them. Uncooked vegetables, lettuces, cucumbers, radishes and mushrooms are to be prohibited. Among the cereals and farinaceous vegetables, rice, sago, mashed potatoes cooked with milk, and purée of lentils are well borne.

Bread must be used very moderately and must be old and well toasted.

[1] Peas and beans contain 22 to 24 per cent. of nitrogenous matter, and only 13 or 14 per cent. of water; spinach and asparagus contain more than 90 per cent. of water and only 2 or 3 per cent. of nitrogenous substances, the figures given in the text indicating the proportion of albuminoids in the solid constituents.—*Trans.*

Stone-fruits are the only fruits to be prohibited; the others may be allowed on condition that they be quite ripe. It is better however to give apples and pears stewed and broken up.

The more usual condiments, salt, pepper, and mustard, are to be permitted in moderate quantities because they excite gently the patient's appetites, which are usually unsatisfactory.

A moderate amount of liquid is to be drunk at meals, in the form either of light beer, or of white or red wine largely diluted with water. Among mineral waters, those are to be avoided that are rich in bicarbonate of soda, and use is only to be made, in default of pure ordinary water, of those that are indifferent or feebly mineralised. Though excessive restriction should not be put on the quantity drunk, it is important that neurasthenics do not take too much liquid with their meals, for this would dilute the gastric juice and render digestion in the stomach slower and more difficult. To avoid the bad results of an excessive amount of liquid ingested, patients who feel a need of drinking abundantly at the end of meals should be recommended to take juicy fruits; enemata also may be prescribed for the same purpose. The kinds of fluid taken must also be closely supervised, because many patients, in order to revive their always failing energy, accustom themselves little by little to absorb various alcoholic drinks either at meals or during

the intervals, and so end in chronic alcoholism. This same instinctive need to stimulate the nervous system frequently pushes neurasthenics to use and even to abuse a variety of excitants, such as tea, coffee, liqueurs, tobacco. We believe that these different stimulants should not be absolutely prohibited except where there are special contra-indications. Tea and especially coffee should not be taken after the evening meal. But there is no disadvantage in permitting a moderate use of them after the mid-day meal; it is not good to deprive the invalids of everything that is pleasant to them. On the other hand, if the patient complain of symptoms of cerebral or cardiac excitement, if he suffer from insomnia or from palpitations, he must be strictly forbidden to use tea, coffee, or tobacco.

Such should be the dietary of neurasthenics affected with gastro-intestinal atony in the first degree. It consists, as we have seen, of a mixed regimen which closely resembles the normal, since albuminoid, fatty, and carbohydrate aliments all take part in it and are combined in the desirable proportions. Its only characteristic feature is the selection, in each of the three classes of foods, of substances particularly easy to digest. It insures at once the general nutrition of the invalid and the regular action of the digestive canal, and must undoubtedly be preferred to all systematic and exclusive dietaries which are supposed to

restore the strength by improving the nutrition of the nervous tissue in particular. Thus American authors, especially Beard and Weir Mitchell, strongly recommend to neurasthenics the use of *fats*, of butter, cream, cod-liver oil, etc. Fat is certainly a food necessary to nutrition; but it is by no means proved that an abundant consumption of this substance exerts a specially beneficial action on the nutrition of the nervous centres. Moreover fatty substances when taken in large quantities rapidly provoke satiety and are often badly borne by the patients.

An exclusively *animal* diet is also fairly often prescribed to anæmic neurasthenics. They are stuffed with roasted and grilled meat in the hope of strengthening them as quickly as possible. This practice is detestable; clinical experience and physiological experiment have proved that such a regimen is incapable of insuring the general nutrition of the organism, that it encumbers the blood and lymph with extractive substances that are more or less toxic, and it is manifest that, where neurasthenics suffering from gastric atony are concerned, it is most unsuited to facilitate the work of digestion in the stomach, even when the secretion of the gastric juice is not profoundly impaired.

The exclusive *milk diet*, so often advised in the treatment of gastric affections, does not suit neurasthenics affected with gastro-intestinal

atony. The large quantities of milk taken by patients subjected to this regimen are often badly digested, and only promote dilatation of the stomach.

We must now consider the cases in which nervous exhaustion is accompanied and complicated by the dyspeptic state that M. Bouveret has described under the name of the *serious form* of gastro-intestinal atony.

Invalids of this class are usually thin; they take far too little food; their dyspeptic disorders are very intense; their gastric secretion is most often markedly impaired, and chemical examination of the gastric juice reveals either a deficiency of hydrochloric acid, which is the most frequent case, or, much more rarely, an excess; and some are affected with permanent dilatation. If general treatment of the nervous asthenia be sometimes enough to improve or even cure the slight form of gastro-intestinal atony, this no longer holds good when the severe form is concerned. Strict diet and local treatment are then necessary to mitigate the disorder of the digestive functions.

The first condition to be fulfilled is to regulate the diet in the matters of the quantity of food taken, the hours of meals, and the choice of aliments.

As to the number of meals, we agree with M. Bouchard, M. Hayem, and M. Bouveret that

three meals a day are enough. Some physicians, with the object of lightening the work of digestion, and thereby the dyspeptic disorders that it causes, advise an increased frequency in the taking of food with a diminution in the amount ingested on each occasion. This practice must be set aside, because it is necessary for a stomach whose secretions are diminished and whose motility is weakened to have sufficiently prolonged periods of rest, in order that when digestion and the evacuation of the chyme are completed it may retract and be in a fit state to receive new food. And if the aliments ingested be too copious as well as taken at too short intervals, then it is easy to conceive that the activity of the disordered stomach, being incessantly solicited, will soon become exhausted, and that permanent dilatation, followed by gastric stasis and the fermentation of the remnants left behind in the organ, may be caused or aggravated by such a regimen.

The indications as to the distribution of hours of meals that have been formulated by M. Bouchard in dealing with the treatment of dilatation of the stomach, are perfectly applicable to the severe form of gastro-intestinal atony in neurasthenics. The morning meal should be taken about seven or eight o'clock; that of mid-day should be the most important; and that of the evening, taken at seven o'clock, should be less copious than the mid-day meal. It is necessary

that this long interval of six or seven hours between the second and third meals be regularly respected; for in old-standing or severe cases gastric digestion is hardly finished at the end of this time. Hence the patient must abstain from food, and so far as possible from drink, during the intervals. After lunch it is usually advantageous for the invalid to take a short walk at a slow pace. Similarly he must not go to bed till about three hours after the evening meal; for absolute rest and sleep seem to hinder the work of digestion, at least in the majority of cases.

The patients must be advised to spend plenty of time over their meals, so that the mastication and insalivation of the food may be complete; those who are afflicted with defective teeth must have recourse to artificial teeth, or else take care to have all their solid food minced. The hygiene of the mouth must also be attended to; all dyspeptics should brush their teeth and rinse their mouths with a slightly antiseptic solution before and after every meal.

Choice of food.—A mixed and varied diet is always preferable to exclusive diets. Since these patients are for the most part either deficient or totally wanting in hydrochloric acid, as is shown by methodical chemical examination of the contents of their stomachs, they must, as in the benign form of gastro-intestinal atony, but still more rigorously, be enjoined to use foods that

are easy of digestion and little liable to undergo acid fermentations. We have already, in dealing with slight atonic dyspepsias, indicated the greater number of these foods that are to be selected, and it is necessary that they figure to the exclusion of all other alimentary substances in the diet list of the neurasthenics with whom we are now concerned. We must especially put aside from this mixed régime complicated and highly-flavoured preparations, uncooked substances, certain starchy vegetables, foods that are too fat, old cheese, in short, all matters that ferment easily in a stomach devoid of free hydrochloric acid. Fats, however, must not be completely excluded from the dietary of neurasthenics, even in the severe form of atonic dyspepsia. But a very moderate use of them should be prescribed, for a time at least, and preference should be given to the fat of beef and mutton and to strictly fresh butter. The usual condiments (salt, pepper, mustard) are to be permitted, but in moderate quantities.

As to the *liquids* to be drunk, the regulations that we have already formulated in dealing with the first degree of nervo-motor dyspepsia, are in all respects applicable here also. Warm drinks may be given with advantage, such as weak tea, or infusion of camomile or lime flowers.

It is in this severe form of atonic dyspepsia that the restriction in the amount of food taken

that we have already mentioned, is frequently practised by the sufferers. When left to themselves they eat less and less, because they observe that a very slight meal is followed by less malaise, and this is very often one of the principal causes, if not the only cause, of their emaciation and loss of strength. Hence the physician must watch attentively over the daily amount taken by the patient, must raise it little by little to the normal quantity, and must convince the patient of the necessity of taking sufficient food even at the price of some suffering. It is in cases of this class, which are especially grave and frequent in the neurasthenia of women, that Weir Mitchell's treatment by means of progressive alimentation may render the greatest services. However, we do not think that the dietary formulated by that physician is applicable indifferently to all cases of inveterate neurasthenia with serious gastro-intestinal atony. Its use should be reserved, we think, for certain cases of nervous exhaustion whose characters we shall indicate precisely when we explain Weir Mitchell's systematic treatment, and the therapeutics of the neurasthenia of women. The mixed regimen that we have just indicated seems to us, in short, to be preferable to the different forms of treatment by fattening, and to all partial or exclusive dietaries, in treating the majority of neurasthenics affected with gastro-intestinal atony.

Drugs.—These patients have almost all swallowed the most varied pharmaceutical preparations without deriving any benefit from them: digestive wines, absorbent powders, bicarbonate of soda, etc. The greater number of these drugs are useless or injurious, and ought to be prohibited. Alkalies especially are generally contra-indicated in gastro-intestinal atony, which is often accompanied by an appreciable diminution in the free hydrochloric acid of the gastric juice. However, if they are taken some time (three-quarters of an hour or an hour) after meals in the form of bicarbonate of soda or Vichy water warmed in a water-bath, they afford marked relief to the patient in some cases. The commercial *pepsines* have about the same therapeutic value as inert powders.

Pancreatine has perhaps some efficacy.

The drug that should most commonly be prescribed in the gastro-intestinal atony of neurasthenics is *Hydrochloric Acid.* It augments to a certain degree the digestive power of the gastric juice, and at the same time it acts as an antiseptic and moderates secondary acid fermentations. It may be ordered in the form of a watery solution of the strength of 3 or 4 in 1000, in doses of a quarter or half a tumblerful half-an-hour after the mid-day and evening meals.[1]

1 This is practically equivalent to 9 to 12 drops of the Acidum Hydrochloricum dilutum B. P. in a quarter of a tumblerful of water, or 18 to 24 drops in half a tumblerful.—*Trans.*

Electricity has been applied, especially in Germany, to the treatment of the gastric atony of neurasthenics. It has naturally been thought that electric currents might stimulate both the motility and the secretion of the stomach; and sometimes the continuous current, sometimes faradisation, has been employed for this purpose. It has generally been in cases of atony with dilatation that electrical treatment has been utilised. Ziemssen, Erb, Leube, and in France M. Bouveret, have obtained some favourable results from it. The following is Erb's method[1] of applying electricity to the walls of the stomach. He places a large electrode over the spinous processes at the level of the cardia; the other electrode is smaller and is moved over the anterior wall of the stomach. If the galvanic current be employed, the positive pole is used as the posterior electrode, and the negative pole as the labile electrode. If faradism be employed, it is necessary that the current be intense enough to provoke a somewhat energetic contraction of the abdominal muscles every time the epigastrium is touched. The sittings should be daily, should last eight to ten minutes, and should take place either before a meal or after washing out the stomach if the patient be subjected to this treatment.

Ziemssen[2] recommends the use of very large

[1] Erb, *Handbook of Electrotherapeutics.*

[2] Ziemssen, *Klinische Vorträge*, Leipzig, 1888, quoted by Bouveret in *Traité de la neurasthénie*, 1891.

electrodes, 8 to 10 inches in diameter, of which one should be applied to the abdominal wall at the level of the pylorus, towards the great cul-de-sac of the stomach, the other at the same level behind, a little to the left of the spinal column. The large area of these electrodes insures the penetration of the current. The constant current is used, the positive pole being placed behind, and the negative in front, and strong contractions of the muscles of the abdominal wall and back are set up by moving the commutator. The sittings last from ten to fifteen minutes.

It has also been proposed to pass one of the electrodes into the cavity of the stomach, into which a certain quantity of slightly saline water has first been introduced. But this procedure has the disadvantage of being borne with difficulty by the patient, and should be rejected.

Washing out the stomach should not be erected into a routine method of treatment of gastric atony, as some physicians seem to believe. Recourse should be had to it only in cases of atony with acid fermentation. Washing out the gastric cavity is certainly a good therapeutic method, but its use should be, so to speak, incidental, because its effect is only upon an intercurrent complication of gastric atony, namely stasis and secondary fermentations of the remnants of the food.

Neurasthenia and hyperchlorhydria.—When enumerating the different dyspeptic conditions that may exist in the subjects of nervous exhaustion, we saw that increase in the gastric secretion of hydrochloric acid, either permanent or intermittent, was sometimes associated with the neurasthenic group of symptoms. Cases of this kind are indeed very rare, and it may be said that among neurasthenic dyspeptics, as among dyspeptics generally, neurasthenic or not, absence or insufficiency of hydrochloric acid is the rule, excess the exception. None the less is it true that every neurasthenic in whom methodical analysis of the gastric juice reveals the existence of hyperchlorhydria, should be placed upon a dietetic regimen appreciably different from that suited to neurasthenics who suffer from gastro-intestinal atony with a normal reaction or with deficiency of hydrochloric acid.

In cases of *simple hyperchlorhydria* it is evidently necessary to banish from the dietary all liquid or solid ingesta of a nature to stimulate the gastric mucous membrane. There must be prohibition of tea, coffee, liqueurs, sauces, and all strongly spiced dishes, condiments, etc. Very little salt must be added to the food. By reason of the chemical qualities of the gastric secretion, nitrogenous foods are digested best; for it is they that combine with the greatest amount of free hydrochloric acid. Hence the greater

number of meats should enter into the diet; but they should be cooked simply, boiled, roasted, or braised. Eggs should also be recommended to those suffering from hyperchlorhydria. The majority of fats and starchy foods are usually well digested by these patients, and their diet, in spite of the ease with which they digest meats, should not be exclusively nitrogenous. It ought to approach as closely as possible to the mixed diet.

The stomach is generally neither atonic nor dilated in the case of neurasthenics with hyperchlorhydria. Stasis and secondary acid fermentations are hardly to be feared in them; hence it is not necessary to limit the amount they drink. Pure water and milk largely diluted with water should be preferred to spirituous liquors which excite too energetic a hypersecretion on the part of the mucous membrane, and may, even in very small doses, provoke gastric pains. Kefir and cider are better borne.

The action of *alkalies* is eminently beneficial here. Bicarbonate of soda should be prescribed to the amount of 45 to 90 grains after the midday and the evening meal. This quantity may be administered in two equal parts separated by an hour's interval; the first should be given about two hours after the meal, that is to say at the time when the gastric pains are expected. This drug, however, though it has a soothing

effect for the time, may eventually increase the acid secretion of the stomach. Hence it is usually better to substitute magnesia or chalk for it, or to combine them with it.

The stomach should not be washed out in the treatment of simple hyperchlorhydria without hypersecretion, because the phenomena of retention and gastric dilatation are absent in this form of dyspepsia.

As to hyperchlorhydria with permanent or intermittent hypersecretion, we cannot deal with it here. Reichmann's disease is in fact too exceptional a complication of neurasthenia for us to set forth its treatment and dietary without overstepping excessively the limits of our subject.

Up to the present we have considered the alimentary hygiene and the various regimens that neurasthenics should be subjected to, with a view to attenuating or curing the dyspeptic disorders that are habitually associated with nervous exhaustion. Dietetics may also be called on to intervene in the treatment of certain neurasthenic conditions, not now as a hygienic measure destined only to palliate the derangements of the digestive functions and to insure the nutrition of the patient even in spite of those derangements, but also as a means of regulating or reforming metabolism. In the chapter dealing with the etiology of nervous exhaustion, we insisted on

the close relationship between neurotic and arthritic states. We saw in particular that the acid or uric diathesis constituted a soil especially favourable for the development of neurasthenia, and furthermore that there were cases in which the neurasthenic group of symptoms seemed to have sprung up under the sole influence of that arthritic diathesis. Thus gout is sometimes complicated by nervous asthenia, not from the result of a pure coincidence, but because the neurasthenic condition has been started and kept up by the gout itself. It is clear that cases of this kind need a special treatment, and that the dietary to be instituted should be specially directed against the uric acid diathesis. Similarly, when neurasthenia is associated with obesity, there may be advantage in modifying first of all the general metabolism of the patient so as to free him from his overburden of fat. What then are the dietaries to be prescribed in such cases?

Gout and Neurasthenia.—It is only when a gouty neurasthenic exhibits no serious dyspeptic derangements, when he is suffering from the slight form of gastro-intestinal atony or from simple hyperchlorhydria, that it is justifiable to put him on a diet strict enough to modify his disordered metabolism. In the contrary case it is absolutely necessary to endeavour first to improve the state of his digestive functions.

Hence the dietary that we are about to lay down here is more especially applicable to gouty subjects who are plethoric and vigorous, and whose stomachs are still good. In fact, an excessive sobriety, a too rigorous regimen of starvation should not be prescribed even to young and robust sufferers from gout, and it is prudent not to make too abrupt an alteration in their dietary. Otherwise there would be a risk of depressing their strength, of aggravating their nervous asthenia, and of transforming into atonic gout their hitherto florid type of the disease. Consequently exclusive diets and forms of treatment by starvation should be avoided.

Among others, Cantani's regimen should be rejected, as it is merely a starvation treatment. Cantani allows only soup, meat, eggs, and fish, and in small quantities. He absolutely prohibits fats and carbohydrates, and on the other hand orders green vegetables in great abundance. Finally he advises the gouty never to eat to satiety. It is evident that such a dietary cannot be followed long without weakening the patient exceedingly.

Absolute vegetarianism must be discountenanced for reasons already given.

An exclusive milk diet is a regimen of relative starvation. It may render real service, but it should not be continued for long. It should only be prescribed for short periods of five or six days

at a time. In this form it is a useful mode of treatment, because it increases the secretion of urine and washes out the organism.

The diet of gouty neurasthenics, like that of neurasthenics free from uricæmia, should be mixed. Nitrogenous foods, fats and carbohydrates should all enter into its composition; but the quantity and the quality of these alimentary substances must be regulated.

The gouty patient must be very cautious in the use of meat. He must eat white meats by preference, as these are less stimulating and less rich in albuminoids than red meats. Munk and Uffelmann have shown that animal albumen does not form more than three-quarters of the total albumen in a normal diet. This proportion may be lowered to two-thirds and even to half in the diet of the gouty, but it will be best, especially at first, to prescribe the daily consumption of a quart of milk, which will approximately compensate for the loss of albuminoid matter resulting from the restricted use of meat.

In the matter of fats and carbohydrates restriction is equally necessary (Bouchard); but here opportunism is indispensable. The allowance of these substances must be proportionate to the activity displayed, to the energy expended daily by the patient; the latter must in any case preserve a certain amount of plumpness, and his weight must remain in correspondence with his stature.

In general, gouty subjects should make free use of green vegetables, carrots, turnips, and cauliflowers, should be very moderate in their consumption of potatoes, and should abstain as far as possible from farinaceous seeds (lentils, beans, peas) and doughy foods, which are much richer in carbohydrates.

From the dietary of the gouty must further be excluded tomatoes, sorrel, spinach, asparagus, and rhubarb, all too rich in oxalic acid ; gherkins and all sorts of pickles. M. Lecorché also prohibits the use of gooseberries, strawberries, raspberries, apples and pears, which are too acid. He allows peaches, plums, and grapes in small quantities. Sugared fruits and sugar in general are only permitted in small amounts.

Is it beneficial for the gouty neurasthenic to drink a large quantity of water? Does the ingestion of this liquid promote the elimination of uric acid, or has it no such influence? Experimental researches undertaken on this subject have led the investigators (Geuth and Henitz, Schöndorff, etc.) to contradictory results. However this be, clinical experience has shown that increased diuresis always facilitates depuration by the urine, and it is known that treatment by waters that are almost indifferent as regards their mineral constituents has a very beneficial action on the gouty. These patients should then be permitted a large allowance of water, either

pure or with the addition of a small quantity of Bordeaux.

It is necessary to forbid the use of generous wines, of liqueur wines, of liqueurs, of beer, and of cider. Tea and coffee are to be allowed, but only once a day, and in small amount.

As to the dietary of obese neurasthenics, it will be found in the volume of this collection that deals with obesity;[1] we could not give the details here without passing beyond the limit that we have laid down.

Diet for a neurasthenic affected with gastric atony of moderate intensity.

Three meals: breakfast at 8, lunch at noon, dinner at 7; afternoon tea at 4 o'clock optional.

BREAKFAST (8 O'CLOCK).

a. Half a pint of milk with the addition of a little coffee, tea or cocoa. Toast with a little fresh butter.

b. Two eggs lightly boiled; a cup of tea; toast.

c. Oatmeal or rice flour, either boiled in milk or water, or beaten up into a cream with milk and the yolks of two eggs.

d. Kefir No. 2 (medium strength). The use of this must not be prolonged for more than 15

1 *Hygiène des obèses* (Prof. Proust and Dr. A. Mathieu), Paris, Masson.

consecutive days, after which one of the other breakfasts must be reverted to temporarily.

LUNCH (NOON).

This meal may consist, as the patient prefers, of either:

1. One meat dish; one vegetable, eggs, or vermicelli or macaroni; one or two kinds of dessert[1]; or

2. One dish of eggs or fish; one dish of meat; one vegetable, or macaroni or some similar doughy food; one or two kinds of dessert.

The dishes are to be chosen among the following:

Eggs lightly boiled, or broiled, or in an omelet soft and slightly cooked with butter in a pan lined with yolk of egg, and with a little fresh butter added at the moment of serving.

Fish (sole, whiting, skate, pike, perch, fresh water trout), which must be quite fresh. Cooked in court-bouillon with water[2] or grilled or fried. The skin not to be eaten. The fish may be accompanied, if desired, by a sauce which should consist only of eggs, milk, cream, flour, uncooked butter; it should be seasoned with salt or lemon.

Oysters: moderately plump.

Beef or *Mutton*, lean, with the fibrous tissue and fat carefully removed, grilled or roasted

[1] In the French sense—see next page.—*Trans.*

[2] Court bouillon consists of vinegar or wine with parsley, laurel, and other herbs; the fish is cooked in it and it is then thrown away—not used as sauce.—*Trans.*

(without the gravy); cold braised meat, not larded; brain and sweetbread[1] cooked with wine sauce and with fresh butter added at the moment of serving, or flavoured with lemon juice; calf's tongue; lean ham (York or Westphalia).

Fowl boiled and served in the liquid with coarse salt, or roasted (without the skin or gravy), or cooked in court-bouillon with water, and with carrots, onions, and fine herbs; galantine of fowl without the jelly.

Game: fresh pheasant or young partridge boiled or roasted (without the skin or gravy).

Vegetables: potatoes cooked in hot cinders, or boiled or baked (without the skin); *well strained* purées of potatoes, peas, lentils, kidney-beans, prepared with soup or with milk to which the yolk of an egg may or may not be added; chicory, lettuce, spinach cooked in milk or in its juice; cauliflower in well strained purées; asparagus with sauce made of cream or eggs; artichokes with white sauce containing no cooked butter celery in its juice; fine French beans, or peas, stewed and with the addition of fresh butter.

Milk puddings with little sugar.

Dessert: mild cheese (cream cheese, new Brie, slightly salted cheese); dry cakes, cooked fruit with little sugar; small quantities of plums (very ripe), or peaches, grapes or oranges.

[1] The advisability of giving food rich in purins to neurasthenics seems doubtful.—*Trans.*

Bread: in small quantity; preferably crusts or toast. The crumb to be avoided, especially of new bread.

Beverages: two glasses[1] at most, preferably less. Alet or Evian water, either pure or with the addition of a little white Bordeaux; or weak beer, or malt beer diluted with ⅔ water; or by preference very hot infusions (weak tea, camomile, lime flowers, orange flowers).

Coffee: if the patient is in the habit of taking this, he may have a small coffee-cupful, after lunch only.

AFTERNOON TEA (4 O'CLOCK).

Dry cakes and a cup of hot tea; or a cup of milk with cocoa or phosphatine.

DINNER (7 O'CLOCK)

This meal is to be composed of soup, one dish of meat, one dish of vegetables or such doughy foods as macaroni, one or two kinds of dessert. The meat may be replaced by fish or by eggs.

The soup should be made of vegetables without meat—of wheat, oatmeal, peas, beans, lentils, rice, semolina or dough, prepared with water, eggs or milk.

The other articles are to be selected from the list given for lunch.

Articles of food specially prohibited.

Hors d'œuvre.

Spices (mustard, pepper, gherkins).

[1] Say 12 oz.—*Trans.*

Lobsters, shrimps, crayfish, shellfish.

"High" game. Game with dark flesh. Potted foods.

Fat meat. Foie gras. Fishes with much fat (eel, salmon, herring, mackerel).

Pork-butcher's meat, except lean ham.

Sauces in general, especially if spiced or greasy.

Cabbage; cauliflowers, except in purée; sorrel, tomatoes, onions, turnips.

Raw vegetables (melon, salad, radish, cucumber).

Fried potatoes and fried food in general except fish, which may be eaten if the skin is removed.

Ripened cheese.

Raw fruit (except plums, peaches, oranges or grapes, if very ripe).

Sweets, greasy pastry, cakes.

III.

The diet required in Intestinal Disorders.—Constipation.—Enteroptosis.—Atony and Spasm. — Muco-Membranous Colitis.—Their Treatment.

Intestinal disorders are commonly associated with the gastric symptoms in neurasthenia. Constipation is very frequent, especially in female patients. Though it is sometimes slight and easy

to overcome, more often it is resistant and tenacious ; the patients complain that their bowels do not move naturally, and that they are obliged to have recourse to artificial means to make them act. This constipation, which is simple and painless in some cases, is at times accompanied by flatulence and borborygmi, especially on waking in the morning. In exceptional cases the patients take no notice of it ; more commonly they worry themselves about it, and are more affected by it than is good for them, attributing to it, not always without reason, the flushes of heat to the face, the occasional vertigo, the respiratory embarrassment, and the abdominal discomfort from which they suffer. It not rarely happens that the constipation is interrupted by short attacks of diarrhœa ; the stools are then liquid or soft, and unload the intestines only very incompletely, leaving it more or less distended by hardened fæces, which are passed later with the aid of laxatives. There is rather a false diarrhœa than a true one. The usual diet of neurasthenics is not of a nature to lessen this trouble; milk, unless it is badly digested, grilled meats, and starchy and doughy foods leave little residue, so that contraction of the intestinal walls is not set up by undigested portions of the food, and the atony is thus increased. Rest in the horizontal position, especially prolonged rest in bed when that is prescribed, also contributes its share in

keeping up the sluggishness of the intestines.

However, contrary to what was long believed, the constipation of neurasthenics is not always due to atony. In many cases it depends on spasm of the intestine. Fleiner, who called attention to this *spasmodic* constipation, thinks that it is the most habitual form in neurasthenics, atonic constipation being more particularly the appanage of old age.[1] The clinical examination of patients justifies the view taken by Fleiner; for it is fairly common to observe by palpation that the large intestine is reduced to the width of the little finger, hard, and contracted, and that it can be rolled under the hand when the iliac fossa is examined, especially on the left side, forming the *sigmoidal cord* to which Glénard called attention in his description of enteroptosis. It is not proved, however, that it is correct to oppose spasmodic to atonic constipation as decidedly as Fleiner does; Mathieu[2], indeed, has shown that the two forms may co-exist, the bowel being contracted in its descending part, while on the other hand it is atonic and dilated at its origin at the cæcum. However this be, we must not lose sight of this notion of a spasmodic element which, in the majority of cases, appears to precede the atonic element and to surpass it in importance; for the treatment of neurasthenic

1 Fleiner, *Berliner Klin. Wochenschrift*, 1893.

2 Mathieu, *Traité des maladies de l'estomac et de l'intestin*, Paris, 1900.

constipation is in large measure dependent on it.

If it is a good hygienic habit for everyone to go to stool at a regular hour every day, neurasthenics ought to make a point of doing so still more than all others. Insufficient motions promote the sluggishness of the liver and the intestinal fermentations from which they often suffer. These conditions are shown by the appearance and the characters of the fæces, which are passed too seldom, and which are either badly coloured (deficiency of bile) or black and fœtid.

But it is no easy matter to contend against the constipation of neurasthenics, at least if we may judge from the list of aperients of which, as a rule, the patients have already made use when they come to consult us. In fact they have often exhausted the series of the customary laxatives of the pharmacopœia, not to mention pharmaceutical specialties or those whose pompous advertisements and fantastic exotic titles are displayed at length on the last page of the newspapers. Out of all this arsenal they have generally retained one or two drugs, their favourite laxatives, which seems to them to be more effectual than the others, and which they employ with an assiduity that they deem to be meritorious.

In this matter it is rarely that we have not to change the habits they have acquired, which are not free from disadvantages; one patient

never sits down to table in the evening without first swallowing one or two pills of some preparation of aloes or cascara; another takes his rhubarb or his dose of Seidlitz powder regularly before the first spoonful of soup, or swallows in the morning his capsules of castor oil, or his glass of Carabaña, Montmirail, or Hunyadi Janós water. The sluggishness of the intestines, though for a time it is more or less overcome, becomes more marked on this regimen, and ends by resisting the means that at first had got the better of it. Then the stomach, which there are so many reasons for being careful of in the case of neurasthenics, cannot always stand uncomplainingly the laxatives that are meant to set the intestines in action, and to which it is compelled to furnish a passage.

The treatment of the constipation of neurasthenics—like that of all habitual constipation, indeed—must be subjected to certain rules. The first of these is one on which I cannot insist too much.

Drugs must be employed as little as possible, and recourse must be had in the first place to hygienic, mechanical and physical methods.

One succeeds fairly often—more often than might be thought—in overcoming the intestinal atony of neurasthenia by correcting the bad habits of the patients. These usually wait till the need makes itself felt before they go to the closet;

and as the need is rare and by no means urgent, and as the possibility of delaying the satisfaction of it is welcomed, for it puts off a small duty which interferes somewhat with the avocations of a busy day, many neurasthenics simply trust to their morning rhubarb or their evening cascara, and await the calls of their intestines patiently. This method of acting is deplorable, and calculated to keep up the constipation; the patients must be made to submit to a quite contrary practice. They must be required to go to the closet at a fixed, absolutely fixed, time, always at the same stage of their dressing; as soon, for example, as they have put on their trousers or petticoats. This method is not new. Trousseau showed the efficacy of it, and he was probably not the first. "The will," he wrote, "and a patient "and regularly applied will, usually triumphs over "this infirmity" (constipation). "Every day, "exactly at the same hour, the patient must go "to stool. He must make vigorous efforts during "a fairly long time, and if these efforts prove "ineffectual he must wait till next day, even if "the need should make itself felt beforehand. If "there is no motion on the second day, after "renewed attempts, he must at once take an "enema, not of tepid water, but of water merely "with the chill off, and afterwards with cold "water. On the next day the same attempts are "to be renewed and to be put off till the morrow

"if they have been ineffectual, and on this second "occasion again a cool enema must be taken if no "evacuation has been obtained. The repetition "of the act, invariably at the same hour, ends by "bringing back the feeling of a desire to pass a "motion at the moment when the patient wishes "to go to the closet. It is rarely that a daily "evacuation fails to be obtained after eight or "ten days of these patient and methodic pro-"ceedings."[1]

I have quoted this passage, for it would be impossible to describe better the *technique* of this re-education of the intestine, which ought to be the principal aim in the treatment of habitual constipation ; let us adhere firmly to the stool at the hour fixed, and *never except at the hour fixed*, unless, it is hardly necessary to say, the desire should be too urgent during the interval, a thing that only exceptionally happens to such a degree in cases of intestinal atony. I make a reservation as to the *vigorous effort* of which Trousseau speaks ; this is useful in the early days of the treatment, in order to *call the attention* of the intestine, but later constitutes rather an element of inhibition ; a time comes when the bowel has acquired the habit, and defæcation takes place more easily if it is automatic and reflex than if under the influence of the will.

The effect of this proceeding may be further

[1] Trousseau, *Clinique médicale de l'Hôtel Dieu*, 5e éd., t. III, p. 195.

aided by taking a bunch of grapes on awaking, or an orange, or a simple glass of water, if the stomach tolerates them well.

Let us insist on this method first and foremost, and at the same time let us impress on the patient the conviction that he must succeed. It must not be presented to him as a plan to be followed, in case of failure, by other and more effectual means. This would diminish its chances of success. A medical man who can gain enough authority over his patient to ensure that the attempt is made with good faith and in accordance with the rules laid down, will often—very often—attain his object.

The result may be promoted, moreover, by advising some gymnastic exercises, especially alternative movements of flexion and extension of the body, which are to be performed by the patients for four or five minutes every morning on getting up, and again in the evening on going to bed. Again, a compress, folded several times and soaked in cold water, should be applied to the epigastrium, as Trousseau advised, on getting up in the morning; it should be covered by a piece of gutta-percha, placed between it and the clothes, and should be left in position for three or four hours.

If regulating the hour of the daily motion, aided or not by the methods that I have just indicated, does not give the results hoped for,

then, and then only, *abdominal massage* is to be combined with it; the best, and really the only kind to recommend, is that which is performed by an expert masseur. Moreover he must make his method depend on the nature of the intestinal disorder; vigorous massage, which might suit cases where atony was the leading feature, would be injurious in spasmodic constipation. In the latter cases the intestine must not be stimulated as in the former, but, on the contrary, what was recently called a "contra-stimulant" action must be produced; it is light and superficial friction, or *effleurage*, that is effectual in these cases.[1] Experience, and even a certain amount of skill, are necessary to do this well; consequently the entreaties of some ladies to be allowed to have the massage done by their maids, must not be yielded to as a rule. The more or less clumsy and usually rough pressure of an inexpert hand may indeed diminish atony; but on the other hand it is injurious if there is intestinal spasm, and that, as was pointed out above, is the rule. For similar reasons one must dissuade the patients from adopting methods which allow them to massage themselves, such as the spheres or cylinders of wood or metal which may be found in shops, and which are intended to be rolled along the course of the intestine so as to perform—more or less well—

[1] Mazeran, *Presse médicale*, 1901.—Froussard, *Thèse de Paris*.

the work of the masseur's hand. The results obtained from them are usually only poor, in spite of which some patients become the slaves of the instrument, and persuade themselves that they could not obtain a motion unless they first kneaded the abdomen in this way for a considerable time. It must be remembered that the neurasthenic easily contracts habits from which he finds it difficult to free himself, and we must endeavour to inculcate none into him except those that are simple and really useful.

Electricity often succeeds when regulating the hour of the motion and massage have not sufficed. Failure is certainly due as a rule to not having taken enough care to distinguish atonic from spasmodic cases. The methods that suit the one are not those that should be used for the other.

But neither massage nor electricity is always applicable. They are not within the reach of patients who live away from large towns, or whose means are limited. In these cases, if the methods already indicated prove ineffectual, recourse must be had to those I am about to mention.

Before turning to laxatives administered by the mouth, which try the stomach more or less, we should recommend enemata. But they must be given with discretion; if enemata are not prescribed at suitable hours and in a good

form, they may be not only useless but harmful.

The injection may be large (a pint) or small (half a pint); it may be simple, that is to say composed of water only, either cold, or with the chill off, or hot, taken in the morning a few moments before the time for going to stool; or it may be glycerinated, i.e. composed of a glassful of water with 6 or 8 drachms of glycerine, given at the same time as the last; or an oil injection, of 15 to 20 ounces of almond or olive oil taken in the morning; or again, as Mathieu advises, an injection of four ounces of oil, administered at bed-time, retained during the night, and followed in the morning by an injection of tepid water, with the object of bringing on the evacuation; and finally we may order copious irrigations of the bowel. These are given as follows: 3 to 4 pints of water, boiled and then cooled to a temperature of 95° to 104°, are placed in a glass reservoir, which is provided with an india-rubber tube having a stop-cock at the end. The patient lies on his right side with his right leg straight and his left thigh flexed at the hip-joint. A moderately soft catheter of red rubber is passed for a distance of 4 to 6 inches into the rectum, the stopcock is adjusted, and the water is allowed to enter the intestine, the reservoir being kept at a height which should not exceed 20 inches. In place of the reservoir it is often more

convenient to use a quart bottle furnished with a siphon.

Some knowledge is necessary in order to be able to choose among these various procedures. Patients often use them of their own accord, in a more or less empirical and clumsy manner, and are surprised not to derive from them all the profit that they expected; it is for us to enlighten and guide them.

In the first place we must prohibit the use of irritating injections. I mean those that contain salt, honey or glycerine, mixed with water. Patients often employ them excessively. Whatever be the form of constipation, atonic or spasmodic, these injections do harm if repeated too often; in the latter case they increase the spasm, and consequently the constipation; in the former they speedily irritate the mucous membrane and predispose to membranous colitis. They should be used only exceptionally and at long intervals, in order to set the intestine going; and not even so in cases where there is manifest intestinal spasm.

When a choice has to be made among the forms of injection enumerated above, it is first necessary to investigate and determine as far as possible if the constipation is atonic or spasmodic in origin. The latter is commoner than the former in neurasthenics. It may be recognised by the following signs: first, as has already been

mentioned, by the feel of the colon on palpation; it is diminished in volume, hard and contracted (colic cord), and can be rolled under the hand; and secondly, by the appearance of the fæces, which look like long cylinders passed through a draw-plate and about as thick as a pencil, or are flat and ribbon-like, and usually dry, or are often divided into small balls surrounded by mucus.

In these cases, everything that irritates the intestine increases the spasm and consequently the constipation. Hence those enemata must be avoided which are of a nature to bring about this result; such are glycerinated injections, cold injections, or copious irrigations administered under too great pressure or in too great quantity.[1] The only forms that can be of use are the small injections of oil, or irrigations with 2, or at most 3, pints of water at 95° to 104°, administered very slowly and under low pressure (10 to 20 inches at most).

The suppositories that are sometimes made of soap shaped into a cone, sometimes of cacao-butter (45 to 60 grains) with which is incorporated glycerine (12 to 24 minims) or castor oil, or ovules of solidified glycerine or honey, may be useful especially in the atonic form. They induce contractions of the intestine not only at the end of the rectum, but along the

1 Mathieu et J. Ch. Roux, *Les abus du lavage de l'intestin. Maladies de l'appareil digestif.* O. Doin, Paris, 1904.

whole extent of the colon. In the spasmodic form, on the other hand, they are usually without effect, or they may increase the trouble instead of lessening it; their use must then be avoided.

If the procedures that we have just passed in review do not suffice to induce regular stools when used with method and, especially in the case of the later ones, with discretion, it will be necessary to have recourse to laxatives, though with regret. In the case of those sufferers from constipation whose gastric digestion is good, we may try the effect of diet before using drugs in the strict sense of the word; whole-meal bread, which contains part of the husk, or even bran-bread, which contains the whole of the husk, green vegetables, fruit raw or cooked, honey, and coffee with milk, facilitate the stools. So do fatty foods in the form of bacon or butter (von Noorden). But with neur-asthenics, whose stomachs so often act imper-fectly, we cannot always use these means. Kefir, on the other hand, which is usually a good food for individuals affected with atony, also possesses laxative properties when it is moderately fermented.

As to drugs, we must first make a choice among those that may legitimately be prescribed, and then advise the use of the selected medicine under certain conditions which will be stated.

Among the laxatives there are some that must

be eliminated; these are the saline aperients—sulphate of soda, sulphate of magnesia, citrate of magnesia, "purgative lemonades," and natural aperient waters. These have the disadvantage of keeping up the tendency to constipation, their first effect being followed by one in a contrary direction. The use of them might, at most, be permitted at long intervals, as occasional purgatives. Exception must be made, however, in the case of calcined magnesia, which often proves a useful laxative in doses of a teaspoonful, not heaped up, taken before a meal, or combined with sublimed and "washed" sulphur and powdered sugar, a mixture of which the same dose, a teaspoonful, is to be given in a little water at bedtime.

The laxative to be used first is that which was lately recommended by Trousseau, following Bretonneau, viz., belladonna. It should be made into pills each containing $\frac{1}{6}$ grain of the extract and an equal quantity of the powder, and one, two, or even three of these pills are to be taken fasting in the morning. Belladonna is very useful in the spasmodic constipation of neurasthenics.

If the belladonna alone is insufficient, podophyllin may be combined with it, as follows:—

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Podophylli Res.

Ext. Belladonnæ $\overline{aa}$ gr. $\overline{iij}$

for 20 pills.

One, two, or even three to be taken, either at bed time or in the morning before breakfast.

Castor oil in a dose of one or two teaspoonfuls, taken simply in a little coffee or orange-juice, or in capsules, is also a good laxative, but the stomach has to be reckoned with; it does not always tolerate the gelatinous capsules in which the drug is enclosed, or the oil itself.

Compound powders (I am enumerating the laxatives in the order of their utility) with a basis of senna, sulphur, or fennel and especially *compound liquorice powder*, of which the majority of the others are only imitations, are also useful. They are given in a dose of one or two teaspoonfuls in a little sweetened water, either at bed time or in the morning before breakfast.

Euonymin in pills of one grain combined with $\frac{1}{6}$ grain of extract of hyoscyamus, powdered rhubarb in doses of 7 to 15 grains, taken either naturally or in cachets, and cascarine, in one grain pills, are also good to fall back on.

Aloes and the greater number of drastic purgatives, such as scammony and jalap, are not so good to use. They are too irritating to the intestine, and may increase the spasm. Hence they must only be prescribed very intermittently and exceptionally, in the form, for example, of the pills given in the Codex under the names of Bontius' and Anderson's pills.[1] A very sedative

[1] Both of these contain aloes and gamboge.—*Trans.*

and often efficient laxative that may be employed with advantage, is decoction of the bark of black alder *(Rhamnus Frangula)*. A decoction is made of 30 to 60 grains of this bark, and when it has cooled it is left to macerate for 12 hours; it is administered at bed time.

In treating the constipation of neurasthenics, there are certain rules that must not be lost sight of:

1. First, that on which I have already insisted: recourse must not be had to laxatives till the methods of simple hygiene have been tried with regularity and sufficient persistence and have shown themselves ineffectual.

2. Laxatives must not be used daily, except those which, like belladonna and infusion of rhamnus frangula, are relatively sedative and promote the regularity of the stools after a prolonged use. These may be administered for 8, 12, or 15 consecutive days, with the risk, however, of finding at the end of these periods that they have become ineffectual. As to the others—podophyllin, euonymin, rhubarb, cascarine,[1] Seidlitz powder—they are not to be allowed more than two or three times a week, and if there is need during the interval, enemata should be recommended in one of the forms already indicated.

[1] Cascarine Le Prince—a preparation of Cascara Sagrada.—*Trans.*

3. Finally, it is a good thing to vary the laxative employed, by having two or three at one's service which are to be used alternately—podophyllin, rhubarb and Seidlitz powder, for example. In this way it is possible to avoid becoming habituated to a drug, which would necessitate a more regular administration or stronger doses.

Before closing this account of the treatment of neurasthenic constipation, a few words must be said about the use of tobacco. It is known that smoking possesses laxative properties. Trousseau recommended it to his patients with constipation, and sometimes he even went so far as to advise women to adopt it, in despite of our French customs. It is certain that the abuse of tobacco, and there are very few smokers who do not abuse it, does harm in various ways, especially to neurasthenics; it may derange the appetite, excite the circulation in an injurious way, and accentuate the attacks of vertigo and loss of memory. Hence its abuse—that is to say, its unregulated and unmeasured use—ought to be forbidden; it is better for a neurasthenic not to smoke at all than to do so at his pleasure. But a moderate use of tobacco, consisting in smoking a good and small cigar, or two or three cigarettes, after lunch and dinner, does more good than harm. The habit, when kept within these limits, promotes the action of the intestines.

Moreover it has another use; it causes the patient to consent more readily to the half-hour's rest in a semi-recumbent position that we have seen to be so often necessary to the regulation of the digestion. Men who smoke are usually more tractable on this point than women, who do not smoke. We should let our patients smoke, then, unless in exceptional circumstances, but should not permit them to do so fasting, or before lunch, or in the interval of meals after the gastric digestion is over. The most we should allow to inveterate smokers is one cigarette after breakfast if it seems to us certain "that it is indispensable to enable them to go "to stool."

It is not uncommon to meet with an abdominal complication in neurasthenics, as to the nature and etiology of which there seems to be considerable disagreement; I allude to that which has been minutely described by Frantz Glénard, in a series of very remarkable works, under the name of visceral ptosis. "It is a state of sinking of "the abdominal organs, which are otherwise "healthy, below their normal position and in the "direction of gravity."[1] It is more commonly termed enteroptosis, although ptosis of the intestine is usually only one of its constituent features, being often associated with sinking of

[1] Frantz Glénard, *Rapport sur les ptoses*, presented to the *Société de médecine de Paris*, 14 May, 1903. Alcan.

other organs—gastroptosis, nephroptosis, hepatoptosis, and even splenoptosis. This is because the ptosis of the stomach, kidney, liver and spleen are supposed to be subordinated, as in a hierarchy, to the ptosis of the intestine.

Now the intestinal ptosis, in Glénard's view, has two causes: it is due either to traumatism, especially in women who are predisposed to it by their organisation itself, by the use of corsets, and by maternity; or to gastric atony occurring as a symptom of certain affections of the liver. "The symptomatology of the ptoses," he says, "including mobile kidney, mobile liver, mobile "spleen, and a number of complaints attributed "to the stomach or the intestine or to nervous "conditions, is essentially connected with the "digestion. The neuropathic state which in "most cases disguises this group of symptoms "and obscures its features, is in its turn a con-"sequence and not a cause of this affection of "the digestion."

I could not absolutely contradict Glénard's opinion on this point. I admit readily that gastric dyspepsia, whether secondary to an affection of the liver or not, and also enteroptosis due to purely mechanical causes, are able to bring on neurasthenic symptoms secondarily. But I cannot accept the position that in the cases in which ptosis is found clinically to be associated with neurasthenia, the latter is invariably to be

considered as a consequence of the former. In this respect I share entirely the view formulated by Bouveret in his work, which remains the classic treatise on neurasthenia: "It is certain that "some true neurasthenics show signs of en- "teroptosis. They have grown very thin, and "this thinness is due to the intensity and the "long duration of the disorders of digestion from "which they suffer. In these patients entero- "ptosis, like dilatation of the stomach, is not the "cause of the neurosis, but it is rather the result, "early or late, of the gastro-intestinal atony, "which itself proceeds from the nervous exhaus- "tion in the same way as all the other symptoms "of that morbid condition. Such is the place "which it is right to assign to enteroptosis in the "pathology of neurasthenia."[1]

Even if Glénard and I came to an agreement on the general theoretical question, which does not seem to me to be impossible, I am not sure that the respective statistics which we should collect with the object of determining the relative proportion of primitive and secondary enteroptosis, would give concordant results. The difference in the figures shown by these statistics, which it would be easy to draw up according to

1 Bouveret, *La Neurasthénie*, Paris, 1891, 2e édit., J. B. Baillière.

[A third view of the connection between neurasthenia and enteroptosis, differing both from that of Glénard and from that of Bouveret, may be found in *Brit. Med. Journ.* 1906, Vol. I., p. 494.—*Trans.*]

the same plan of observation, would depend less on the easily rectified divergence of our points of view than on the different conditions under which our observations would be made.[1]

However this be, enteroptosis is often observed in neurasthenics, sometimes in men, but much oftener in women, who are especially predisposed to abdominal displacements by the use of corsets and above all by pregnancies. In these cases the abdomen appears wasted, and its walls are flaccid and seem too large for their contents; when the patient is sitting or standing, the hypogastric region projects abnormally; when lying down, on the other hand, it is the lumbar regions that bulge; it is very manifest that the girdle formed by the abdominal parietes does not come in contact with the viscera so as to hold them in place. Peristaltic movements of the distended stomach are seen at the level of the umbilicus, and even lower; the intestine is diminished in calibre and retracted. Palpation shows the *cæcal sausage* in the right iliac fossa, the *colic cord* along the course of the transverse colon, and the *sigmoidal cord* in the left iliac fossa. These terms are due to Glénard, from whom the following description of these conditions of the large intestines are borrowed.

The *cæcal sausage* is sometimes visible to the

1 Presumably this means that their patients are drawn from different classes.—*Trans.*

naked eye. It is deviated so as to be internal to the usual position of the cæcum. Its diameter is not more than $\frac{1}{8}$ inch to 2 inches. Its length is perceptible for a distance equal to the breadth of four or five fingers. On pressure it usually gives a feeling of elastic resistance, showing that its contents are chiefly gaseous, and in this case the tumour is resonant to percussion; or it has a doughy, or even hard, consistence, indicating that it is filled by solid matter. When it is reduced to the diameter of a finger, it may have the consistence of a bundle of muscular fibres in relaxation. The cæcal sausage can be moved from side to side, but not upwards.

The *colic cord* consists of the prolapsed transverse colon. It is best seen in thin subjects. The highest point at which it is found is an inch above the umbilicus, the lowest 2 inches above the pubes. It is most often seen in the mesial line only; fairly frequently, however, it is not mesial but lateral, either to the right or to the left, and in this case it is always in the umbilical region. The cord is usually of the thickness of a finger, but it may be thicker, in which case it is more prolapsed. In the former case it is soft in consistence, in the latter it can be felt loaded with scybala. Light but continuous pressure on the cord elicits a fine gaseous crepitation, and produces contraction, which is shown by hardening and constriction of the intestine.

The *sigmoidal cord* lies in the left iliac fossa, in the part near Poupart's ligament, parallel to the fold of the groin and at a distance of two or three finger-breadths from it. It is as thick as a goose-quill, can be seen for a length of 3 to 4 inches, and sometimes its hardness may be compared to that of a goose-quill; on the other hand it may be thicker and show itself as a knotty cylinder, loaded with scybala. It is not painful on pressure, but it sometimes happens, as in the case of the cæcum, that pressure may induce nervous symptoms such as might be ascribed to the ovary if one had not the sigmoidal cord under one's fingers.

Hepatoptosis is often associated with enteroptosis; in this case the lower border of the liver is felt at a greater or less distance below the costal margin.

But it is nephroptosis (mobile kidney) that is especially common in those with enteroptosis. Glénard distinguishes two varieties of mobile kidney—the hypochondriac and the lumbar. These can be recognised, according to him, by having recourse to a method of exploration which he has well described in detail. In the first stage the hands are placed *in readiness* at the base of one of the hypochondriac regions, so that if the kidney is lowered by a deep inspiratory movement on the part of the patient, that is to say, if it is mobile, it necessarily comes within reach of the

fingers. In the second stage *(capture)* the fingers make an effort to seize the kidney. In the third stage *(escape)* they have seized it and compress its lower pole forcibly, so as to make it escape with a rebound. The stage of escape furnishes the pathognomonic sign of mobile kidney—viz., the special rebound at the moment when its lower pole escapes from the pressure of the fingers. The hypochondriac mobile kidney can be palpated during inspiration only, the lumbar mobile kidney even at the end of expiration.

Among the complex group of disorders exhibited by neurasthenics with enteroptosis, are there any functional symptoms that can be referred with certainty to the latter condition? The question is not so simple to answer as might appear. Gastric atony, intestinal atony and intestinal spasm, when acting alone, cause dyspeptic troubles of such a nature that it is by no means easy, in cases of enteroptosis, to disentangle those that are due to the atony or spasm from those that are due to the enteroptosis itself. It seems to me, however, that neurasthenics with enteroptosis show certain symptoms that do not exist, at any rate to the same degree, in those whose abdominal organs are not prolapsed; such are the sensations which the patients describe as weakness or disorder of the stomach, twinges of pain in the stomach, false sensations of hunger, feelings

of emptiness, aching across the loins, most of which figure among the symptoms connected with the umbilical region in Glénard's description. I do not know if the same can be said of the insomnia occurring especially between two and four o'clock in the morning, and of the dyspepsia without loss of appetite which is relieved by a diet of boiled eggs and grilled meat, by frequent meals, daily laxatives, bicarbonate of soda and the dorsal decubitus, both of which symptoms the distinguished Vichy physician attributes to enteroptosis. On the other hand I readily agree with him that enteroptosis, by setting up a mechanical hindrance to the free circulation of the contents of the alimentary canal, may cause the *attacks of painful colic* which these patients often enough feel, either by day or by night.

When enteroptosis occurs as a complication of neurasthenia, it requires special treatment. The first thing is to avoid the mechanical causes that are of a nature to increase the ptosis; hence the patients must avoid all bands, buckles, and belts that are liable to compress the abdomen and push its contents downwards; women should wear special corsets, such as are readily made nowadays, which support the waist without squeezing it, and leave the abdomen free. The second indication is to raise the abdominal viscera, and to keep them up. It

is carried out by means of Glénard's belt. This is an elastic band, about 6 inches wide, sufficiently firm, even, and with straight and parallel edges; if desired, it may be hollowed over the trochanters by turning up the lower border in the corresponding positions; it is fastened at the back by three buckles, and is furnished with perineal bands. It is applied to the most dependant part of the abdomen, and surrounds the pelvis in such a way that the upper edge of the band reaches only one or two finger-breadths above the iliac crests. It must be tightened sufficiently, and must be constantly worn by day; Glénard advises that it be sometimes worn at night also, when insomnia proves refractory to treatment. The belt may advantageously be furnished, as Mathieu proposes, with a semilunar pad, which will compress and raise up the hypogastrium and the iliac fossæ. Various modifications have been made in the details of Glénard's belt, and more or less perfected bands can be found at the instrument-makers.

As enteroptosis hampers the movements of the intestinal contents, it is necessary to have recourse to laxative medication, which, in Glénard's view, is one of the fundamental indications of the treatment. He advises that it be carried out by the daily administration of a saline aperient, either in the form of a small dose of some natural purgative water (as

Hunyadi Janós, Villacabras, or Rubinat), or by giving 60 grains of sulphate of soda with 45 grains of sulphate of magnesia in half a glass of cold water every morning.

For my part, I have not found that the treatment of the constipation of neurasthenics with enteroptosis differs from that of the constipation of neurasthenics without enteroptosis, such as I have already described. It only requires a more rigorous, more methodic, and more continuous application of the measures already given. I do not share Glénard's infatuation for saline aperients in neurasthenics with visceral prolapse, and I persist in considering their habitual use, which I have recommended to be avoided in simple neurasthenic constipation, as equally injurious in the case of neurasthenics affected with enteroptosis. I object to them as keeping up the tendency to constipation, and as rendering themselves indispensable, and I cannot advise the use of them except occasionally, or in cases in which the constipation has shown itself refractory to the other measures on which I laid stress.

The constipation which is so common in neurasthenia, as we have seen, and often so obstinate, sometimes gives rise to a troublesome complication which becomes a new source of annoyance to the patient and of mortification to the doctor; I allude to *enteritis*, or rather to *muco-membranous colitis*.

This complication is by no means always a consequence of neurasthenia. It is observed in children as a sequel to attacks of acute colitis, and its occurrence is promoted in women by lesions of the uterine appendages and by tight corsets which cause ptoses, and in people of easy circumstances by the excessive use of meat and spiced dishes. The neuro-arthritic temperament seems to predispose to it. But, independently of cases arising in these different ways, there is no doubt that muco-membranous colitis is often a more or less distant sequel of the constipation that is associated secondarily with the different neurasthenic states.

The common exciting cause is the over-use of irritating injections or suppositories, or, on the other hand, a neglect of the precautions required by the constipation.

A patient who at first suffers from the simple constipation of neurasthenia, and who is more or less solicitous about his constipation, notices after a certain time that the stools, which are often divided up in scybala and formed of small hard balls like those of sheep, are surrounded by more or less liquid or adherent mucus, resembling raw or boiled white of egg. The mucus becomes steadily more abundant; after periods of constipation, the duration of which varies according to the treatment, there comes a general clearance of the intestine; and

if the motions are examined, they are found to consist sometimes of fæcal matter mixed with mucus, sometimes exclusively or almost exclusively of mucus. This has the aspect of glutinous masses, resembling raw white of egg, or rather frog's spawn; mixed with it are particles of solid mucus, having rather the appearance of fat, or boiled white of egg, or curdled milk. The quantity of these glutinous mucosities is very variable; the patients pass at first about as much as a teaspoonful, then a wineglassful, then a tumblerful. As a rule it is not till later that "skins" and false membranes appear. These more or less resemble newly formed fibrinous membranes; they vary much in dimensions, sometimes not exceeding $\frac{1}{4}$ or $\frac{1}{2}$ square inch, and sometimes forming a sort of small sheet cut at the edges, and about an inch wide by 3, 4 or more inches long; they may then resemble a piece of tape or a tænia. At other times they have a tubular form, and may then attain a length of 4, 6, or even 10 inches. From the already old researches of Laboulbène, which have been confirmed and completed by the more recent investigations of Edwards, Nothnagel, Kitagawa and Swen Akerlund, Schmidt, and Krysinski, it is known that these false membranes are composed of strata of solidified mucus, without a trace of fibrin, and with cells of different kinds in its interstices—epithelial cells from the intestine,

leucocytes, and red corpuscles—and also an abundance of different micro-organisms.

Muco-membranous colitis is not a negligible complication in the case of neurasthenics. It brings on paroxysmal crises of pain that render the existence of the patients particularly distressing. These crises are at first separated by considerable intervals, but they may become more and more frequent till there is no day on which the patients do not experience them. They occur most often several hours after a meal, or about the middle of the night, and manifest themselves by colic, by sharp sensations of burning, or by cramp, sometimes just above or below the umbilicus, in the region corresponding to the transverse colon, sometimes in that of the sigmoid flexure, more rarely in that of the ascending colon. This pain is often severe enough to recall the pains of labour or those of hepatic colic. It sometimes radiates to the back, the loins, or to the bladder, where it causes vesical tenesmus. It may be accompanied by a feeling of faintness. A crisis is usually the prelude of an intestinal flux, in the course of which the patient passes a more or less considerable, sometimes very considerable, quantity of mucus and false membranes.

In the intervals of the crises of pain, the bowel often remains tender, especially in the region of the left iliac fossa, but sometimes also in that of the cæcum. Palpation usually shows the cæcum

to be more or less distended by gas, and sensitive to pressure, whereas the transverse colon and the descending colon, which are more or less painful, are contracted and in a state of spasm, and can be rolled under the fingers. When the cæcum is painful, the sensation is sometimes propagated along the inner surface of the thigh.

Another consequence of membranous colitis is the appearance of symptoms of auto-intoxication under the influence of intestinal fermentations promoted by the colitis, or even of symptoms of infection from the multiplication of micro-organisms. It was at one time hoped that analysis of the urine would confirm the information afforded by clinical examination. It is well known that intestinal fermentations give rise to three kinds of toxic products: the fermentation of carbohydrates produces fatty acids (butyric, caproic, and valerianic), and that of proteids produces ptomaines and aromatic substances (indol, skatol, and phenol) which combine with sulphuric acid in their passage through the liver, forming the ethereal sulphates. The ideal would be to make a quantitative estimate of these different products; in practice this is not possible, but at least we can estimate the ethereal sulphates in the urine, and from the amount of them we can, to a certain extent, judge the degree of intestinal putrefaction. The matter would be simple if we knew the normal average amount of these sulphates, but

chemists are not agreed about this quantity; moreover it varies so much according to the composition of the diet that we must give up trying to establish a valid average. The method of coefficients is also tainted with error. This method consists of taking into consideration not the absolute weight of a substance in the urine, but the ratio of its weight to that of another substance, the variations of which in the normal condition are supposed to be parallel to those of the first. The coefficient most easily used is that of Baumann. It expresses the relation between the sulphuric acid combined into inorganic sulphates and that combined into ethereal sulphates, and is as follows:

$$\frac{\text{Sulphuric acid in the form of ethereal sulphates}}{\text{Sulphuric acid in the form of inorganic sulphates}} = \frac{1}{10}$$

This would be very useful if it were not that changes in food cause the amount of the inorganic sulphates to vary at the same time; so that the coefficient may be altered by other influences than those of intestinal fermentations. We must not attach too much importance to the results of chemical investigations so long as they have not acquired sufficient exactitude; we should be exposed to committing the worst of errors—that which hides itself under the apparent precision of figures. Baumann's coefficient should be remembered, however, so that on occasion we may

make use of it with such degree of confidence as it deserves.[1]

Some patients are constantly in a half febrile state. They are always complaining of cold, especially in the extremities, a feeling of cold that alternates with rushes of heat. One is surprised to see them covered with furs, even in the height of the summer. They have anorexia, a coated tongue, a bad breath, and frequently a state of nausea. The face is yellowish and thin. At such times neurasthenics complain of headache, attacks of vertigo, and insomnia, even more than ordinarily. The stools in these circumstances contain not mucus only, but soft and fœtid matter mingled with it. In short, there are all the signs that reveal intestinal auto-intoxication.

This is not the place to give a full history of muco-membranous enteritis, for it is far from being a manifestation of neurasthenia exclusively. It is in treatises on affections of the digestive passage that a suitably detailed study will be found[2]; but as neurasthenia predisposes to it, promotes its development, and is often complicated by it, it was necessary to indicate the new features that it adds to the clinical picture of neurasthenia, when it is associated with it. There

[1] On this subject see an excellent review by Gaston Lyon, in *Gaz. des Hôpitaux*, 14 May, 1904.

[2] See especially A. Mathieu, *Traite des maladies de l'estomac et de l'intestin*, Paris, O. Doin, 1901, and the recent book by Combe (Lausanne).

remain to be mentioned the new indications that it furnishes in the matter of treatment.

As the muco-membranous enteritis of neurasthenics results from constipation, whether associated with enteroptosis or not, the means of preventing it, and of mitigating it when it has occurred, consist above all things in dealing with the enteroptosis and constipation. I need not return to the methods of doing this that are at our disposal. What I must say here is that we must have recourse to them with all the more assiduity, the more danger there is of the occurrence of membranous colitis; this may be estimated by examining the motions from time to time, or by having them examined. We must redouble our cares if we find those glutinous mucosities that indicate the beginning of the affection.

When the complaint is established, it is important to prevent or do away with the complications of auto-intoxication or intestinal infection which it so often occasions. To this end the intestine must be rendered as aseptic as possible. Three means—of unequal value—are at our disposal:

1. Intestinal antiseptics, and purgatives.
2. Enemata, antiseptic or not.
3. Diet.

Intestinal antiseptics have lost much of their prestige. Naphthol, benzonaphthol, and salol—

the first two at least—irritate the stomach and have no marked action on the intestine. Betol, which is a compound of salicylic acid and naphthol, has not the same disadvantages, and has sometimes seemed to me to be really useful; it is to be prescribed in cachets of 7 to 14 grains each, to be taken twice a day, half an hour or an hour after each meal. I may say as much of salacetol, which is recommended by Bourget (Lausanne); it has appeared to me to be a good antiseptic, but it also has the defect of irritating the stomach. Hence it cannot be given continuously. But in doses of 7 to 10 grains, in cachet, at bedtime, every fourth or fifth day, it is of real service.

Purgatives are the best medicinal antiseptics for patients who have membranous enteritis. The bacteriological researches of Gilbert and Dominici have demonstrated with exactitude what had already been established by clinical observation. Hence it will be good to give a small dose of a saline purgative from time to time, say once or twice a week; 300 grains of sulphate of soda or magnesia, a tumblerful of Montmirail, Carabaña, or Hunyadi Janós water, or half a tumbler of Rubinat. Castor oil, in ounce doses, will be of similar service, and so will calomel. It will be found very good to combine these two drugs in the manner once indicated by Bretonneau, which consists in giving 2 grains of calomel in the evening at bed-time,

and three-quarters of an ounce, or an ounce, of castor oil in the morning. This purgation may be repeated every ten, twelve, or fifteen days if needed. It must be remembered, however, that it is inapplicable in the case of certain patients, because of the colic which calomel sometimes causes when taken under the conditions which I have just mentioned.

Whatever be the utility of purgatives in muco-membranous enteritis, we must not forget that they must be given at intervals; if given too frequently or for too long a time, they irritate the intestine and increase the pains. The patient must be watched attentively so that they may be prescribed opportunely, and the use of them suspended when they cease to be of benefit.

Washing out the intestine is also a good means of remedying the complication of infection. It is to be ordered in the same form and with the same precautions that were indicated in connection with the treatment of simple constipation. The suggestion has been made that antiseptics or other modifying substances should be mixed with the fluid used for the washing; their utility has not been demonstrated so clearly as their disadvantages. Ichthyol, however, which has been recommended by Bourget, Blondel, and Mathieu, may be employed with benefit. Mathieu advises that 1 to 3 tablespoonfuls of a 20 per cent. solution of neutral sulphichthyolate of

ammonium be mixed with each quart of boiled water.

Certain watering places, as Châtel-Guyon, Plombières, and Marienbad, are of service in muco-membranous enteritis; their utility is due to the fact that they contribute to the regulating of the bowels, as in the case of Châtel-Guyon and Marienbad, or to the methods of irrigating and cleansing the intestines that are in current use, as at Plombières for example.

Diet is of capital importance in membranous colitis. At the beginning, when constipation is the dominating symptom, and when cure of the constipation is enough to cause the disappearance of the glutinous mucosities that the too infrequent stools contain, the use of green vegetables cooked, or of fruits cooked or raw, may be advised when it has been ascertained that the stomach is able to tolerate them; grapes and oranges may be tried, taken in the morning before breakfast. But it must not be forgotten that we are now considering patients affected with neurasthenia, and therefore almost always with gastric dyspepsia, so that they do not always support well the foods of which I have just spoken. One of the great difficulties in treating gastro-intestinal disorders in neurasthenia depends on the varying complexity of those disorders, and on the consequent multiplicity of the therapeutical indications. Hence

we cannot fix on a simple and special diet; general rules determined beforehand are subject to many modifications according to the nature of the cases, and here, as everywhere, the physician must have observation and tact in order to hit upon the treatment that is best adapted to the situation.

What I have just said of the diet directed against constipation, applies also to the diet directed against intestinal infection. To consider this last only, the regimen must be combined in such a way as to promote fermentations and the reproduction of microbes as little as possible. From this point of view the best foods are milk, kefir, and starchy articles. Milk has an anti-fermenting action which is well known and has been shown more clearly by the works of Poehl, Biernacki, Winternitz, Gilbert, and Dominici. But neurasthenics are not always willing to take it, as they say that it does not suit their stomachs.

Kefir has an action similar to that of milk, and should be preferred to milk if it can be procured and if it is sufficiently fresh; patients soon become used to it as a rule, and, apart from exceptional cases, support it exceedingly well.

But a rigid diet of milk or kefir is needed only when there is present an acute stage of muco-membranous enteritis, with severe pain and loss of appetite.

It has been established by a number of experiments, especially those of Hoppe Seyler, Krauss, and Combe (Lausanne), that farinaceous food diminishes intestinal putrefaction[1]; moreover it is said to promote the digestion of proteids (Rübner, Krauss, Muncke, Wicke and Weiske). On the strength of these facts, farinaceous foods have been made the basis of the diet of patients with auto-intoxication of intestinal origin. Combe,[2] following Gräwitz, Senator, Rosenheim and some others, has laid down the rules of this diet. It is composed of milk, malted starches, potatoes, such doughy substances as vermicelli, macaroni, and other pastes of similar character, rice, semolina, tapioca, sago, arrowroot. The mode of preparation of these foods is of great importance. The malted starches are made into soups by cooking them in water for about half an hour, and afterwards adding, if desired, a quarter or half the amount of milk. Potatoes are baked, or boiled and made into a purée with the addition of butter after cooking. The doughy foods or pastes are cooked in salt water for twenty to forty minutes, and a little fresh butter is added at the moment of serving. Rice, semolina, tapioca and arrowroot will serve to make soups or puddings, with the addition of milk, sugar, and yolk of egg.

[1] Gaston Lyon, *Prophylaxie et traitement des auto-intoxications d'origine intestinal* (*Gaz. des hôpitaux*, No. 55, 1904).

[2] Combe, *Arch. de Médec. des enfants*, Jan. and Feb., 1904.

Combe recommends that frequent meals be taken, and that solids and liquids should be taken separately and alternately. Thus six meals a day may be advised: three solid meals, at 7.30 a.m., 12.30 p.m., and 7.30 p.m., and three liquid meals, at 10 a.m., 3.30 p.m., and 5 p.m.

Finally, if nitrogenous food other than milk or eggs is taken, that is to say, if meat is taken as well as starchy substances, the patient must be careful to take about five times as much carbohydrates as proteids.

This diet, which succeeds well in the enteritis of children and adults, gives good results also in cases of muco-membranous enteritis accompanied by putrefactive fermentations. But in administering it to neurasthenics, one often enough stumbles against objections founded on the difficulty that the stomach finds in digesting starchy matters; the patients often complain that foods of this kind "blow them out" or "suffocate them," and one is obliged to compromise with them. On the other hand, if the stomach is atonic, as is frequently the case, digestion takes place slowly, and fairly long intervals must be left between meals, which excludes the possibility of frequent meals.

The following is the scheme I usually formulate for the diet of neurasthenics who are affected with membranous colitis accompanied by symptoms of intestinal fermentation.

1. In cases where the coated state of the tongue is very marked, where there is loss of appetite, distension of the abdomen, severe and frequent attacks of pain, attacks of diarrhœa with abundant false membranes and putrid stools, the diet is to be exclusively of milk, which may be taken as the patient prefers, either in small quantities frequently repeated, or in larger quantities at longer intervals; or, better still, an exclusive diet of kefir No. 2, of which 4 to 6 glasses are given daily. Few patients can tolerate more.

If the milk or the kefir is not borne well, as happens occasionally, they may be replaced by soups of water and starchy foods, with or without the addition of a little milk; these are to be given from two to four times a day. This diet presupposes rest in bed, or at least the being confined to the bedroom.

2. When the pains are less severe, the diarrhœa-like motions less distressing, and the abdomen less distended, then, whether the patient has previously been put on the preceding regimen or not, a lacto-farinaceous diet is to be prescribed, in the following form:

a. Breakfast at 8 a.m.—Kefir or milk, pure or with the addition of a little tea or coffee; dry cake, or rusk, or crust of toast, with a little fresh butter, or a thick farinaceous gruel, boiled.

b. Noon.—Lunch of two dishes and a dessert,

chosen from the following articles: thick boiled farinaceous gruel; purées of potatoes, dried peas, or lentils, boiled in water and with fresh butter; baked potatoes, rice, macaroni, "nouilles," pudding, new cheese, stewed fruit with little sugar. The yolks of two eggs may be permitted. Toast or rusks.

c. At 4 p.m.—Kefir, or milk (with coffee or tea), or cocoa made with water.

d. At 7 p.m.—As at noon.

No liquid is to be drunk at the noon or evening meals, but a glass of Alet, or Evian, or some other good and mild mineral water, may be taken, if desired, at 10 a.m. and bed time.

3. In the stage in which the symptoms of intestinal fermentation are still slighter, the addition of a little meat (grilled mutton or beef, lean ham, fowl, hot or cold, beef à-la-mode cold) may be permitted, first at the mid-day meal only, and later at both the mid-day and the evening meal; but the meat should be accompanied by a large dish (four or five times as large) of purée of vegetables, rice or macaroni.

These diets, however, are only indications that may be modified according to circumstances. In such matters we must have ruling principles which we must follow as far as possible, without forgetting, however, that the living organism is not a retort, and that, especially in the case of neurasthenics, we have to reckon with questions

of taste, repugnance, appetite, and gastric reactions to aliments, that compel us to make our prescriptions suit the peculiarities and special indications of each case. To know how to do this is the distinguishing mark of the able physician.

In conclusion, I must say a few words on the means, apart from diet, of calming the sufferings of patients affected with painful membranous colitis. One often has to exert oneself to this end, for not only are the sufferings often very great, but they produce in the patients, who are already very sensitive as a rule, reactions that show themselves by insomnia, despair, and gloomy ideas. The application of hot or chloroform compresses, or sometimes of ice, to the abdomen, and above all hot baths, are very valuable from this point of view. For internal use, we must prescribe belladonna, in pills of $\frac{1}{6}$ grain of the extract, which may be combined with $\frac{3}{4}$ grain to $1\frac{1}{2}$ grains of extract of valerian, from one to four or five pills being given during the day; or codeine may be given as the syrup in a little infusion of orange leaves, or in pills of $\frac{1}{6}$ grain, of which one to five may be administered daily.

CHAPTER IV.

HYDROTHERAPEUTICS.

Hydrotherapeutics may prove of the greatest service in the treatment of neurasthenia. It is certainly one of the best physical agents in the domain of therapeutics, and there are very few cases of nervous exhaustion in which its use is not formally indicated. The stimulating and tonic action exerted by cold applications on the nervous centres, and through them on the whole organism, is especially beneficial to sufferers from nervous asthenia. Although "the state of irritable weakness" that characterises this neurosis shows itself sometimes by signs of asthenia, sometimes by phenomena of erethism or excitation, yet hydrotherapy, with its stimulating influence, is none the less indicated to combat these two classes of symptoms, because their opposition is only apparent and they are due to the same cause, debility of the nerve centres.

All hydrotherapeutic procedures, however, are not equally applicable to the treatment of nervous exhaustion. In general, violent stimuli

and the too pronounced abstraction of heat are badly borne by neurasthenics. The mildest measures are by far the best, and among those that seem to us to give the most thorough and most permanent results, we may mention sponging, the wet pack, and the cold shower played over the different parts of the body. But it is not enough to prescribe one method or another; it is necessary also to show how the method chosen is to be applied.

Wet pack with friction.—The *wet pack* may be prescribed without danger in all forms of neurasthenia. A very coarse sheet is soaked in water at 70° to 75° F. and wrung out vigorously. The patient takes off all his clothes and stands upright, and the sheet, prepared as above, is unfolded and thrown rapidly over his shoulders and back, and the edges are carefully brought together in front over the chest, abdomen, and limbs. The hand is then placed on the wet sheet and regular friction is immediately performed for one or two minutes over the whole surface of the body; this done, the sheet is removed and the patient is dried quickly by a second methodical friction with another sheet that is dry and slightly warmed. He then dresses and walks about so as to favour reaction, or, if he be too weak, he goes to bed for an hour and the reaction is not long in coming. On the following days the temperature of the water may be progressively

lowered till it reaches 60° F. This is certainly one of the mildest hydrotherapeutic measures, but yet it is efficacious enough, and its use is especially to be recommended in neurasthenic conditions where the indication is to give tone to the nerve centres without exciting the peripheral nerves too violently. This procedure has the further practical advantage that it can be carried out at home and does not require any special apparatus.

Dripping wet pack without friction.—This method consists essentially in wrapping the patient for one or two minutes in a sheet that has been soaked in cold water but not wrung out, and afterwards rubbing him gently with a dry sheet. This procedure, like the former, has a tonic and sedative action, but is less exciting. It constitutes in fact an excellent means of training and of preparation, and can be employed with advantage every time that a patient cannot at first support the douche or friction with a wet pack that has been wrung out.

Cold Sponging.—*Cold sponging* in the *tub*, with a large sponge steeped in water, the exact temperature of which does not matter, may also be used, either to train the patient to the douche or as a means of continuing at home a treatment that has been begun in a special establishment.

Cold Shower.—The *cold shower* sprayed over the different parts of the body is much more

active than the wet pack. It is *the* method above all others, and must be prescribed and applied to every patient who can visit a hydrotherapeutic establishment daily. The shower must be sprayed first on the feet and calves and the back of the body, carefully avoiding the head and neck. Then the patient turns round and the front of his body is played upon. Finally the water is directed on the feet for a few seconds in an unbroken jet. The duration of the shower-bath should be very short, not exceeding 30 seconds, and if the water be very cold, below 50° F., 6 or 8 seconds will be enough, at least in the beginning of the treatment, to produce the desired therapeutic action. "Too short a shower-bath has no disadvantages; too long a shower-bath is always dangerous." (Fleury).

In this connection, however, the facility and the greater or less rapidity with which the subject reacts must be taken into account, and it must not be forgotten that the duration of the shower-bath should be proportional to the sensitiveness of each patient and his state of training.

After the shower-bath the patient is dried and rubbed, and takes moderate exercise in order to facilitate the reaction.

The hydrotherapeutic measures that we have just indicated should, to produce their complete effect, be continued for a sufficiently long period. One, two, or three months are usually needed to

arrive at the result desired. Whatever be the procedure used, wet pack, sponging, or cold shower, the patient must not undergo more than two applications daily. In the majority of cases there should be only one wet pack or shower, and it should be given in the morning immediately on waking; that is the most favourable hour. Such we think is the plan to be followed in the treatment of the greater number of neurasthenics.

Tepid shower.—Hot shower.—Scotch douche.—But the personal susceptibilities of the patient and the coexistence of certain diatheses sometimes render the application difficult, if not impossible. We shall now examine these difficulties inherent in the particular condition of each subject, and the special indications that result from them.

When it is thought right to make use of the cold shower in the case of a neurasthenic who manifests a marked repugnance to such a hydrotherapeutic measure, it is necessary, before applying the shower at a temperature of 45° or 50° F., to train him in some sort by first using less rigorous procedures. It would, in fact, be imprudent to take into account neither his pusillanimity, which is often very great, nor his physical sensitiveness, which is sometimes very real. By subjecting him at once and without caution to a very cold or a cold shower, 60° F. or less, one would run the risk of making him worse

for a time, of inspiring him with an aversion to hydrotherapy that would prove unsurmountable for the future, and thereby of depriving him of a beneficial mode of treatment. The patient's sensitiveness may be tried by making use at first of a cold shower, but of very short duration (2 to 5 seconds at most). When the trial has been made, then those on whom cold water is found to make too great an impression may be acclimatised by having recourse to either a warm or a luke-warm shower, the temperature of which is to be progressively lowered, or to the Scotch douche. The former of these two procedures has been the object of criticisms that seem to us well founded. After the luke-warm or temperate bath, the vascular reaction is almost nil; the patients have no tendency to grow warm again spontaneously; they shiver and, as the superficial chilling of the skin persists, the effect produced is the reverse of beneficial. The cool shower (65° to 75° F.) presents almost the same disadvantages. The reaction of temperature that it produces is often insufficient, and it may provoke the return or the development of neuralgic or rheumatic pains. The Scotch douche is a better means of preparation for cold water, and should be preferred to the preceding methods. It consists in giving first a warm shower at a temperature of 97° or 98°, which is steadily and fairly rapidly raised to 105° or even 113°. The

shower is continued at this maximum degree for thirty seconds, one minute, or two minutes at most, and then the temperature of the water is lowered abruptly, and without passing through intermediate stages, to 45° or 50°; the duration of the cold douche should not exceed ten to fifteen seconds (F. Bottey).

There are some neurasthenics who, no matter what mode of training is followed, cannot support the action of the shower-bath even at a moderate temperature. In these cases recourse must be had, as the final method of treatment, to the proceedings without douches that we have already indicated, such as wet friction, sponging, packing in wet sheets, or even the ordinary hip-bath cooled. Certain neurasthenics show themselves altogether refractory to cold water; in whatever manner it be applied they experience so disagreeable a sensation at the moment of contact with it that the cold water cure must be definitely banished from their treatment.

There is a class of patients who, without being too strongly affected by the contact of the cold shower, yet find that their nervous irritability and their various forms of malaise increase under its influence. And sometimes the mitigated methods of cold sponging and wet friction are hardly more successful. Idiosyncrasies in this matter are met with in practice, and must be respected. Some of these hyperexcitable patients,

however, bear fairly well immersion in the plunge-bath with still water and at a moderate temperature (60° to 70° F.), provided that the duration of the immersion does not exceed half a minute or a minute at most. In this form the use of the plunge-bath may produce effects both tonic and sedative; whereas the cold plunge-bath with running water brings on phenomena of excitation in the majority of neurasthenics that must be avoided at all costs.

Temperate bath.—The *temperate bath* again, at 85° or 90°, may be ordered for these neurasthenics. When in the bath the patient should feel a pleasant coolness which does not go so far as to produce shivering. The duration of the bath will vary according to the effect produced on the subject. He ought to leave the bath at once if shivering occurs. At first a keen sensation of cold comes on in the second or third minute; but in the long run the sensitiveness is blunted and the patient ends by remaining five minutes or even more. It is well to keep a cold compress on the head during the bath. Afterwards the patient is simply to be wrapped in a woollen blanket. The temperate bath is usually followed by a moderate but sufficient reaction, and its tonic and sedative effects are very marked.

In the case of *rheumatic* or *arthritic* patients, cold water must not be used except with much prudence and moderation. It is undeniable that

cold applications, even of short duration, fairly often arouse rheumatic pains in these subjects. In such cases it is better to abstain from them altogether. The tepid bath or the warm douche, or else the Scotch douche, must then be resorted to in the hydrotherapeutic treatment of these patients.

Tepid bath.—The *Tepid bath* (from 90° to 97°) is almost devoid of action on the temperature of the body. When accompanied by friction with soap it makes the skin supple, revives its physiological functions and acts beneficially on the peripheral nerves. Its effects are chiefly sedative: it moderates the activity of the heart and the excitability of the nerve centres, and facilitates sleep. The results obtained from it in the treatment of arthritic neurasthenics are all the more appreciable because in the majority of these subjects symptoms of excitement are predominant. The duration of the bath should be from thirty to forty minutes. If prolonged out of measure, it brings on fatigue and depression. It is often followed by a more or less marked chilling of the cutaneous surface. Hence care must be taken after every tepid bath to promote the return of heat to the skin by energetic friction and sufficient wrappings.

The *warm douche* (90° to 97°) produces a sedative action in the same way as the warm bath; it moderates the reflex excitability of the

cerebro-spinal system, calms cerebral or cardiac erethism, and lessens insomnia. Over the warm bath it has the advantage of being less debilitating, thanks no doubt to the shock of the jet of water and the gentle stimulation that it gives to the cutaneous innervation. This douche must be played slowly over the different parts of the body for three to ten minutes. After the warm douche, as after the bath, the patient should be vigorously rubbed and carefully wrapped in a warm bathing gown.

The Scotch douche may be used with advantage in the treatment of arthritic neurasthenics. We have already indicated the manner in which it is applied. It is at once tonic and sedative, and has not the disadvantages of the cold douche in the case of these patients.

Half-bath.—The *half-bath*, which since the time of Priessnitz has been commonly used in Germany and Switzerland, where the douche is less employed than in France, may be used for excited neurasthenics, especially to calm them and bring on sleep. It has the advantage over the douche that the patients can take it at home, and in the evening before going to bed. It is given, according to Beni-Barbe,[1] in a large bath, in which the patient is made to sit as comfortably as possible. The water should not cover more

[1] Beni-Barbe, *Exposé de la méthode hydrothérapique*, Paris, 1905, Masson.

than the lower half of the body, and its temperature is usually about 85°F. at the beginning. If the patient finds this immersion agreeable, he may be left there for some minutes without any disadvantage. At the end of this time taps are turned on which are arranged so as to regulate the inflow and outflow of water in an exact manner, and in this way the temperature of the bath is steadily lowered by four, six, eight, or even ten degrees. While this is going on, water must be taken from the bath in a pail or other convenient receptacle, and thrown over the parts of the patient that are not submerged; and the whole surface of his body must be rubbed, the lower parts with most energy. The duration of this immersion and the operations that complete it varies from five to ten minutes, according to the patient's powers of resistance and the degree of his excitement.

When the patient leaves the bath, he is sprinkled with water at an agreeable temperature, practically that of his body, and he is rubbed gently, and told to rest in his bed. The operation has usually a very marked soothing influence, which produces an agreeable sensation of relief, and even a restorative sleep.

We must now pass in review the hydrotherapeutic procedures that are specially applicable in the treatment of certain predominant or fundamental symptoms of neurasthenia.

For *headache* and *vertigo* moderately stimulating applications are those that suit best. But they must be used with great prudence, at least in the beginning of the treatment; the cold shower may be tried, the spray being directed against the lower limbs and lower half of the body only. It is in these cases that care must be taken to avoid touching the back of the neck and the upper part of the back. Experience has shown in fact that applications of cold water to this region provoke or aggravate vertigo in patients subject to it. Or again, the treatment may be commenced—and this is a more moderate and more prudent manner of proceeding—by giving the Scotch douche at decreasing temperatures.

For those who suffer from persistent insomnia, the warm douche (from 93° to 97°F.) is to be ordered, with a duration of three to five minutes, and striking the body gently. The temperate bath at 86° F., of short duration and combined with colder affusions to the head, gives good results in cases of insomnia with marked prostration.

The *damp pack* is calming without being debilitating. It is exactly indicated in cases of *insomnia*. Here it must be applied in the patient's room at the moment of going to bed at night. This procedure is very efficacious. The Germans, perhaps, carry it rather to excess; but it certainly does not deserve the oblivion into which it has fallen in France. It sometimes succeeds when

the douche and baths have failed. The following is the manner of carrying it out: two woollen blankets are spread on the bed, and over them is laid a sheet that has just been wrung out after having been dipped in water at a temperature of 50° to 60° F. The patient lies down on the sheet; he is sprinkled rapidly with some drops of cold water, and is then wrapped up so that the whole surface of his body is in contact with the wet sheet; the blankets are then folded over him. To obtain the desired tonic and especially the sedative result, the patient is left wrapped up in this way for ten, fifteen, or twenty minutes. After a slight shivering at the beginning, the pulse, which was at first quickened, becomes slower; the patient experiences a sensation of well-being and calm, sometimes he feels a general torpor and somnolence, and finally a desire to sleep is produced. If the damp pack be prolonged beyond the time indicated, there results a diaphoretic reaction that ought to be avoided.

For *gastro-intestinal atony* may be ordered the abdominal douche in the shape of a fan, the dorso-lumbar douche, the alternating douche localised on the abdomen and lasting two minutes (Bouveret), or else the epigastric wet pack. This last application produces a revulsive and excito-motor local action that is very beneficial to patients affected with atonic dyspepsia and constipation. It practically constitutes a local

vapour-bath. The epigastric or abdominal pack consists of a linen or cotton band 8 to 14 inches wide and long enough to go three times round the body. The first turn only is wet, the two other turns are dry and exactly cover the first. A flannel band is put on over all. The application lasts for a time varying from fifteen to thirty minutes.

Rachialgia and precordial pains are usually calmed by the local application of warm showers or Scotch douches. As to the hydrotherapeutic procedures to be employed for *genito-urinary* symptoms (spermatorrhœa, impotence, neuralgia, etc.), we shall describe them in detail when we set forth the treatment of the genital form of neurasthenia.

To sum up, hydrotherapy ought only to be made use of in the treatment of nervous asthenia with a great deal of prudence. Cold applications, if given in excess, may aggravate the patient's condition. Account must always be taken of the idiosyncrasies of the invalids, of their general condition, and of the leading disorders of which they complain. It is indispensable at the beginning of the treatment to test, so to speak, the sensitiveness of each subject, and to observe carefully the way in which he reacts; the mildest methods are the best. Such we believe are the general principles that should guide the physician in applying hydrotherapeutic measures to the treatment of nervous exhaustion.

CHAPTER V.

CLIMATIC TREATMENT—CHOICE OF A HEALTH-RESORT.

It is well known that the majority of neurasthenics are extremely sensitive to atmospheric influences. Both rigorous cold and excessive heat produce an unpleasant impression on them, and are equally injurious to them. It is certain, in fact, that many of these invalids find their condition improve during the intermediate seasons, and grow worse on the other hand in winter and in summer. Hence it is temperate climates that suit them best. Neurasthenics who are able to leave their home for several months together should always be advised to spend the extreme seasons in a suitably chosen locality. In thus leaving the places where they have suffered for a longer or shorter time, and where the diverse exciting causes of their neurosis are generally all united, they escape the injurious suggestive action of their surroundings and habits, and at the same time they profit by the beneficial influence exerted by residence in an agreeable locality and a milder climate on their

mental and physical condition. But in this chapter we propose to study more especially the hygienic action of different climates on the various classes of neurasthenics. This study will naturally lead us to lay down with precision the rules that must guide the physician in the choice of a climatic health-resort.

We shall examine successively the physiological effects:

1. Of mountain climates;
2. Of lowland climates;
3. Of maritime climates.

Mountain climates.—Mountain life enjoys a deserved repute in the treatment of neuropathic states and of neurasthenia in particular. It is in summer, during the months of July and August, that elevated climates are especially to be recommended. This climatic treatment is certainly preferable, at least for the greater number of neurasthenics, to treatment at thermal springs, as well as to residence in maritime resorts.

The climatic characters of elevated health-resorts are multiple: the atmospheric pressure is relatively low; the temperature is lower, and the difference between the thermometric mean of the day and that of the night is more marked; the sky is less cloudy than in plains and low-lying valleys; the air is drier and purer; the solar radiation is greater, and, if the place is suitably situated, strong atmospheric currents are broken

and weakened before reaching it by the neighbouring mountain chains. The locality chosen should not be too high, for it is known that to pass directly from low regions to a sufficiently elevated altitude (for example 5,000 to 6,500 feet and upwards) produces peculiar physiological effects in normal subjects; these consist in modifications of the respiration, the cardiac rhythm, the internal temperature, etc. In his work on climatic treatment, Weber reports that, out of forty-four individuals observed by him under the above-mentioned conditions, he found that the frequency of the pulse was hardly modified in thirty-two, that it was increased in ten in the proportion of 5 to 18 per cent., and that it was slightly lessened in two. Out of forty subjects who had passed from low lying plains to heights varying from 4,000 to 8,000 feet above the sea level, he also observed in the first few days after the change of altitude that the number of respirations had increased by from two to five inspirations a minute. Out of ninety persons observed after a stay of from two to twenty weeks in elevated resorts, he found that in the majority the number of respirations had not varied, and that in the others it had either diminished or increased by from two to four a minute. But other observers have arrived at totally different results.

The fact is that the mental condition of the

subject observed, his alimentation, the external temperature, and other influences may modify the rhythm of the respiration and the pulse. The above-mentioned investigations, in spite of their apparent precision, are surrounded by many causes of error; hence it is impossible to draw from them reliable conclusions as to the action of change and degree of altitude on the movements of the heart and the respiratory apparatus. This is not the case with the modifications that have been noted in the composition of the blood. M. Viault[1] observed an increase of the red corpuscles in five persons who had lived for a few days only at a height of 13,000 feet. His investigations have been taken up again, but for a lower altitude (6,000 feet) by F. Egger.[2] This author's observations were made on twenty-seven normal subjects or neurasthenics, and he noted that in a very short time, after a stay of four or five days on the average, at Aros, the number of red corpuscles increased from 5,459,666 to 6,357,047 in a cubic millimetre. At the end of several weeks' or several months' residence the blood of these same subjects showed a slight further augmentation in the number of red cells (7,000,000 on the average). The researches of F. Egger on the parallel modifications in the hæmoglobin of the blood and the number of corpuscles in man, and his experiments

[1] Viault, *Comptes rendus de l'Acad. des sciences.*, C. xi.
[2] Fritz Egger, in *Handbuch der Neurasthenie* von F. C. Müller.

on animals (experiments which we cannot here describe in detail), lead us to believe that the increase in the corpuscular richness of the blood thus produced under the influence of altitude is quite real, that it is only in part attributable to the concentration of the fluid, that is to say, to a diminution in the total amount of serum, and in fact that the phenomenon is one of physiological adaptation of the constitution of the blood to the relative rarefaction of the oxygen in the atmospheric air. If this interpretation be correct, it will enable us to explain the mechanism of the disorders exhibited by many normal subjects during the first days that follow their arrival at altitudes of 6,500 feet and upwards. These disorders, which are little marked, consist in slight erethism of the circulatory system with a tendency to shortness of breath and a certain state of mental depression. They recall fairly exactly the symptoms complained of by anæmic patients. It is, then, to a sort of *relative oligocythæmia* that we must ascribe the disorders of respiration and circulation observed in persons who have recently come into high mountainous regions. In those who enjoy good health, the physiological adaptation to the new conditions is accomplished rapidly, and the disorders of the period of acclimatisation are soon over. It follows that neurasthenics in a state of profound anæmia, those whose nutrition is gravely affected, and

still more those who in consequence of age or of concomitant constitutional diseases are not in a state to support this adaptation, should not go to very elevated climatic health resorts. Lofty altitudes, those that reach or exceed 6,500 feet, will be of little benefit to them and sometimes even will not be borne. A medium altitude of 3,000 to 5,000 feet is usually enough. Only those neurasthenics whose general condition has remained good, those who suffer from a slight form of nervous exhaustion, and above all convalescents, can profitably pass the summer months at higher altitudes. Ziemssen has with much reason advised two visits to the mountains, the first about the middle of spring, to a lower altitude (1,500 to 3,000 feet), during which visit the patient rests from the fatigues of winter and accustoms himself to the mountain climate, the other in summer, to a higher altitude.

To a suitable altitude, a good mountain health resort must unite other hygienic conditions. It must be sufficiently sheltered from winds. The position must be picturesque and such that it affords extensive views. Again, the patients must be able without fatigue to find walks and easy excursions in the neighbourhood. Finally, the material arrangements must be comfortable.

Experience has shown that when all these conditions are combined, a mountain climate exerts an eminently beneficial action, at once

sedative and strengthening, on all the organic functions and on the nervous system of abnormal subjects. Under the influence of the active life in the open air, of excursions over broken ground, of the general stimulation due to the freshness of the air and the solar radiation, the nutritive exchanges are quickened, the appetite improves, and consequently a larger amount of food is taken, so that if long walks and climbs are not pushed to excess the weight of the body increases notably. Thanks to the activity displayed each day, the muscles that aid in respiration gain greater energy, and the inspirations, if they do not increase in frequency, at least become deeper; the contractile energy of the heart and vessels is similarly increased. Hæmatopoiesis is more complete and sleep is better. The cool dry air promotes the elimination of a larger quantity of water vapour. In short, the nutrition of the nervous centres and the other organs is improved. Such are the physiological effects of a mountain climate; let us see now what its action is on neurasthenics.

It is certain that the greater number of these invalids benefit by this increase of vital activity that a stay in the mountains instils into the whole organism. Some neurasthenics at the beginning of their residence, even when the altitude is only a little more than 3,000 feet, experience loss of breath and palpitation of the

heart, in a word the various troubles that may be exhibited, as we have seen, by normal subjects who go directly to heights of 6,500 feet, and upwards. These patients must be advised to rest during the first few days of their acclimatisation.

The first walks must be very short and broken by frequent halts. But at the end of eight or ten days the initial discomforts vanish completely; greater muscular activity is then to be allowed, but it is important that the walks and excursions should be regulated in such a way that the increase may be progressive. The sensation of fatigue caused by them must be only slight and agreeable, and in no wise distressing. Headache, rachialgia, digestive disorders dependent on gastro-intestinal atony in its slight form, muscular feebleness, these are the neurasthenic symptoms that diminish most rapidly and most steadily under the influence of a mountain climate. On the other hand insomnia is there as elsewhere *the* obstinate disorder *par excellence*; it rarely disappears completely. Patients who habitually sleep well sometimes experience insomnia during the first few nights of their stay; but this trouble soon disappears, like all the other discomforts of the period of acclimatisation. There are, however, some neurasthenics whose sleep remains irregular and insufficient for the whole duration of the treatment, and who do not regain peaceful sleep till they are once more established in their

own homes. Finally, there are some, but these cases are exceptional, who from the time of their arrival in the mountains are tormented by such insomnia that they are obliged to break off the treatment. In this respect one meets with idiosyncrasies, with individual susceptibilities, that it is impossible to foresee.

These general principles enable us to lay down the indications for the employment of mountain climates in the treatment of neurasthenia. Such climates undeniably exert a stimulant and tonic action on the nervous centres, and on the great functions of the economy, the circulation, the respiration, and the digestion; hence they may be recommended to the majority of those suffering from nervous exhaustion. They are especially indicated in cases of cerebrasthenia in which symptoms of cerebral depression predominate, when the cerebral asthenia, the inability to work, and the headache have developed under the influence of intellectual overpressure or prolonged troubles; in cases of mild cerebro-spinal neurasthenia accompanied only by atony of the digestive passages, or by a slight degree of anæmia; and finally, a residence among mountains is altogether beneficial to convalescent neurasthenics whose recovery is still recent and needs, so to speak, to be consolidated.

On the other hand the following neurasthenics must not be sent to resorts whose altitude is

3,000 feet or more: those whose nutrition is already seriously involved; those who suffer from the severe form of gastro-intestinal atony; those who, in consequence of the long duration of their ills, or of insufficient nourishment, have fallen into a state of weakness and anæmia that renders them incapable of any muscular activity; those who exhibit very pronounced symptoms of cerebral excitement; and those in whom cardiac erethism has acquired great intensity, and who suffer either from violent palpitations or from permanent tachycardia. High altitudes are also unfavourable to rheumatic neurasthenics, to those tormented by anxious obsessions, notably by agoraphobia, and to those who are subject to frequent attacks of vertigo. These different classes of patients should instal themselves in summer either in the plains, or in subalpine health-resorts at a height of 1,300 to 3,000 feet and well sheltered from strong winds. Again it is necessary that the resort they have chosen shall afford all the elements of the treatment prescribed (comfort, medical supervision, hydrotherapy, etc). There are in France, in the Alps of Savoy and Dauphiné, several valleys admirably situated, and altogether suitable for the residence of neurasthenics. But the establishments found in them are usually defective in their arrangements, and consequently the majority of these patients go to Switzerland.

Lowland Climates.—Lowland climates have no specific action on neurasthenic states. It is only indirectly that they benefit invalids suffering from nervous exhaustion. If they aid in the efficacy of the treatment, it is chiefly because the patients who go to live in a selected health-resort leave their habitual surroundings and the causes that have given rise to their neurosis, and at the same time find a climate that is more genial in winter and cooler in summer and that enables them to spend the greater part of the day in the open air; they also enjoy more agreeable scenery; and, in short, the sum total of the new sensations that they experience exerts a beneficial influence on both their mental and their physical condition. There is reason however to advise those neurasthenics for whom mountain and marine climates are counter-indicated, to instal themselves by preference on the shores of the Swiss or North Italian lakes, or simply in the country far from the noise and bustle of towns; there only will they find the perfect calm and the rest that they require. Apart from all climatic action, country life exerts the most salutary influence possible on most of the symptoms of neurasthenia. It must especially be recommended to those neurasthenics who inhabit towns. We have many times observed that a stay of some weeks in the country is enough to bring about an improvement that several months' treatment in

town had failed to produce. It is especially those neurasthenics in whom symptoms of excitement predominate that are likely to benefit by a sufficiently prolonged residence in the country and the relative isolation that it gives. Headache, insomnia, excitability of the senses and appetites, and emotionalism, such are the troubles that have seemed to us more particularly to amend.

Maritime Climates.—Should a stay at the seashore be recommended or forbidden to neurasthenics? This question is much disputed. Many neurasthenics go of their own accord to the Atlantic coast in summer, and in winter to resorts on the shores of the Mediterranean (Riviera di Ponente, Hyères, Cannes, Nice, etc.). It is undoubted that these invalids cannot always congratulate themselves on their visit, although they may have lived in the quiet and the observance of rules of life that are appropriate to their condition. The fact is that a maritime climate does not suit all neurasthenics. At the seaside the air is fresh and keen and always in motion, gusts of wind are frequent, and sea-baths, even when very short, have a tonic action of the most energetic kind; hence sea-water and seaside air are not in general beneficial to cases in which symptoms of excitement predominate; they rather aggravate these symptoms and sometimes even bring on new troubles. Some

patients who have hitherto slept soundly are attacked by insomnia, or wake frequently during the night; others complain, especially towards evening, of a sort of vague malaise made up of mental over-excitement, of enervation accompanied by marked acceleration of the pulse, and of a feeling of heat in the skin; others again are tormented by cardiac palpitations. Arthritic neurasthenics suffering from hyperæsthesia, those whose nervous exhaustion is complicated by hysterical manifestations, those who are subject to fits of anxiety, and those who are under the influence of intense moral depression and who are habitually gloomy and show a great tendency to melancholy, find themselves generally much the worse for a stay at the seaside. Similarly, those neurasthenics who ordinarily suffer from rheumatoid pains frequently complain of an aggravation of their sufferings. All these patients must be warned against maritime climates, even if very dry.

On the other hand a stay at the seaside often gives good results in the case of those whose nervous exhaustion has followed on excessive physical fatigue or exaggerated intellectual work, and, in general, in all cases in which phenomena of erethism and excitement are almost absent and in which symptoms of languor and weakness predominate, such as muscular asthenia, incapacity for work, or sluggishness of the digestive

functions.[1] Patients who go to reside at the seaside should of course instal themselves near a quiet beach, far from fashionable watering-places, and should keep aloof from the society life led at such places and the thousand causes of fatigue and excitement that are generally found there. It is evident that such a holiday would hardly be healthier or more profitable to the patient than life in any large town.

Travelling.—Should travelling be recommended to neurasthenics? No absolute rule can be drawn up in respect to this. It is the same with travelling as with all other measures employed in the treatment of nervous asthenia: the effects are beneficial or injurious according as the treatment is prescribed to suitable or unsuitable cases. The matter is one of judgment and tact on the part of the physician.

It is certain that many medical men follow a routine of advising all their neuropathic patients to travel. Now it often happens that the neurasthenics who have thus been transformed into tourists by their doctor's orders find their condition aggravated after some weeks of peregrinations; the majority, when their exodus is over, remark with bitterness that they are as ill as they were on the day they set out. Beard and Charcot addressed strong ironical criticisms to those of their colleagues who invariably

[1] A stay at the seaside often increases constipation.—*Trans.*

prescribed long journeys for their neurasthenic patients, without taking into full account both the indications and the counter-indications. In order to estimate such a method at its true value, it is enough to picture to oneself these neurasthenic travellers suffering from muscular feebleness, always tired, exhausted by a simple walk, and then to imagine them embarking for distant countries, leaving the boat to take the train, going from town to town, passing whole days in visiting monuments and museums, making continual excursions, and condemned, dyspeptics as they are, to unceasing changes in their food and mode of life. It is clear that such an existence is little calculated to restore the balance and the energy of their exhausted nervous system. It is well known that those suffering from severe neurasthenia, debilitated subjects, and those affected with gastro-intestinal atony, should remain quiet. They need a calm and regular life. It is evident that travelling in no way suits them, and, whether they stay at home or go to the country, the mountains, or the seaside, once they are installed in their new abode they should refrain from further changes and from excursions which would tire them to no purpose. Cerebrasthenics only, who have maintained all their muscular strength, and who are able to walk and to accomplish long excursions on foot without feeling too tired, are able

to profit by a well arranged journey. The changing sights that are unrolled before their eyes, and the new and agreeable impressions that they experience in the course of their wanderings, act beneficially on their minds by modifying their moral disposition. But even these patients must not indulge in their excursions immoderately, they must avoid all excess of physical fatigue, and above all they must not take with them when they leave home the preoccupations and cares from which precisely it is necessary to distract them. Unfortunately this last condition, important as it is, is often very difficult to realize. Of what use is it, for example, to recommend a long and distant journey to a merchant or a manufacturer if he abandon his business unwillingly and if he be accompanied by disquiet and the fear that his affairs will be carried on badly?

On the other hand, take a man who has been attacked by cerebral neurasthenia in consequence of excesses, of over-pressure, or of some grief connected with a definite event that is over and done with; if he set out without regret, leaving no source of disquietude behind him, taking away with him, so to speak, the whole of his moral troubles, this patient cannot fail to benefit by an extensive journey that will remove him for a long time from the surroundings in which his illness developed. But in the majority of cases

it is rather short journeys that are indicated. Beard and Ziemssen also advise changes for a short time to a well chosen and not too distant locality. "To all cerebrasthenics whose brain is "suffering from intense work or strong preoccu- "pations," writes M. Bouveret, "I advise a visit of "several days or several weeks to the mountains "of Switzerland or Dauphiné in summer, to the "shores of the Mediterranean in winter. They "do not abandon their affairs completely; they "merely leave them willingly for a few days. "They go to obtain rest without carrying with "them the worry of feeling that their business "is in danger, as it might be during a long "absence. When they arrive at their destination "they spend some days there in a state of calm "and in rest of body and mind." This advice seems to us excellent, for a journey of this kind can be made two or even several times a year without doing any great harm to professional occupations. But the patients must be forbidden to indulge in too long walks or in too frequent excursions during their holiday. They must absolutely avoid all physical fatigue.

CHAPTER VI.

EXERCISE AND GYMNASTICS.

When muscular exercise is taken in a form suited to the individual who engages in it, it produces, as is well known, physiological effects of the most beneficial kind. It invigorates the circulation of the blood, and increases the respiratory exchanges by amplifying and quickening the action of the lungs; it also stimulates indirectly the functional activity of all the organs, including the secretory glands, and raises the general nutrition of the tissues; finally, by causing contraction of the muscular walls of the abdomen, it produces a sort of massage of the hollow organs inside that cavity and thereby facilitates the passage of their contents. Independently of these local and general effects, bodily exercises further produce a series of stimuli to the nervous centres, the hygienic and therapeutic value of which is indubitable, and which ought consequently to be made use of in the treatment of neurasthenic conditions. But it is not enough to prescribe muscular exercise in a vague manner, leaving to the patient the work of

finding out what kind and amount of exercise are suited to him; to do so would be to lay oneself open to cruel disappointments. It is not uncommon to see a patient who has aggravated his condition by indulging in excessive or badly regulated muscular work. The choice and regulation of the form of exercise constitute an important element in the treatment of neurasthenia and require the whole attention of the physician. They naturally vary according to the general state of the patient and the degree and form of his malady; but there is in truth no case in which muscular exercise should not figure under one shape or another in the treatment of nervous exhaustion.

There is a whole group of patients to whom it would seem at the first glance that all muscular work should be forbidden; these are the subjects who in consequence of serious and prolonged gastro-intestinal disorders have fallen into a state of emaciation and profound feebleness, and those whose muscular asthenia is extreme and whom a few slight movements suffice to exhaust. These neurasthenics however should not, as one might expect, be left in absolute rest. Complete muscular inaction would be as injurious to them as exaggerated work, but it is evident that only the mildest forms of exercise suit these invalids, and that for them more than for all others the rule of progressive increase of work, of slow and

methodic training, must be rigorously obeyed. The neurasthenics with whom we are dealing are perpetually on the verge of fatigue; their reserve of motor nerve energy is, so to speak, nil, and the slightest voluntary movement is enough to exhaust them. Hence the only muscular work that can be prescribed to them, at first at least, is that effected by passive movements and massage; though the patient is at rest, the movements communicated to him bring about (like those produced by voluntary muscular contraction, but without any expenditure of motor nerve-energy and consequently without functional fatigue of the nerve centres) a whole series of muscular, tendinous, and cutaneous stimuli, which are transmitted by the sensory nerves to the cells of the centres. These peripheral stimuli caused by massage, which is only a form of passive movement, or by communicated movements properly so-called, tend to arouse the physiological activity of the motor nerve-centres; they stimulate them gently; and even the mental image of the movement accomplished aids in the same result, that is, in preserving the functional activity of the centres without tiring the patient. Passive exercise and massage offer the further valuable advantage of promoting the peripheral circulation; hence they constitute the mode of gymnastics to be preferred in the grave forms of nervous exhaustion and notably in those cases in which

muscular asthenia is well marked. That is why they figure so happily in the systematic treatment recommended by Weir Mitchell for the neurasthenia of women; when we explain his method we shall see that at the beginning of the treatment the patients are subjected to complete and necessary muscular rest, which would cause sluggishness of the peripheral circulation and aggravation of the gastro-intestinal atony if massage, passive movements, and faradic electricity were not used to ward off these disadvantages. And it is only little by little, when the alimentation and the power of assimilation are considerably improved, that the patient is allowed to make voluntary movements, slight and infrequent at first, but progressively increased in pace with the augmentation of her strength under the influence of the quiet, the rest, and the dietary to which she is subjected.

When convalescence has fully begun, when these neurasthenics are able to stand up and to walk for a longer or shorter time without becoming tired, modes of exercise are thenceforward appropriate that may be made use of from the beginning in the slight forms of nervous exhaustion. Cerebrasthenics, those who are affected with cerebro-spinal neurasthenia but who exhibit a slight degree only of muscular asthenia, and above all those whose loss of motor power is due to enfeeblement of the will, to aboulia or old

standing habits of idleness, all these should take to some active exercise. In such cases the physician must be able to determine exactly the amount of effort and to choose the form of movements that are appropriate to each patient; that, as M. F. Lagrange[1] very justly remarks, is the secret of treatment by exercise; it is also a problem that, in so far as neurasthenics are concerned, is not always easy to solve.

Speaking generally, it is evident that exercises requiring much strength, gymnastics with the aid of apparatus, and athletic contests must be systematically forbidden to neurasthenics; however slight be the degree of nervous exhaustion presented by the patients, these forms of gymnastics are too rough; they are out of the question here.

It is natural exercises and games in the open air that must be recommended to these invalids. At the beginning of the treatment however, and as a preparation for free and unsystematic physical exercises, it will be well to subject them for some time to medical gymnastics as employed by the Swedish physicians. We need not here describe this form of gymnastics, nor the "mechanical" gymnastics invented by Zander; we may say however that, more than any other form, it allows of the exact measurement and if necessary the localization of the muscular

[1] F. Lagrange, *la Médication par l'exercice.*

exercise. Hence it seems to us to be an excellent method of training for those neurasthenics who have for long been accustomed to more or less complete muscular inactivity. When appropriately applied it imposes on the patient only a graduated task always a little below his powers, and that is a condition essential for the progressive restoration of his muscular energy. But it has one serious disadvantage—its want of attractiveness; many neurasthenics soon lose interest in it. Medical gymnastics then should only be utilized, we think, in the treatment of nervous exhaustion as a transitory measure and as a stage preparatory to the freer and more active movements of exercises in the open air.

Games like croquet, tennis and football, and athletic exercises like walking, bicycling, riding, rowing, etc., produce results more generalised than those of methodic gymnastics. They are better stimulants to the great vital functions, respiration and circulation, and moreover they are *recreations*, which is an advantage of great importance in the treatment of neurasthenic states. The interest and pleasure that the patients take in them act beneficially on their nerve centres. These recreative occupations remove hypochondriacal ideas and gloomy thoughts from the patient's mind, and at the same time restore his confidence in his own powers. Consequently, in the absence of special

contra-indications, the neurasthenic who is able to indulge in these exercises must be left free to choose those that attract him most. But the physician must not lose sight of the fact that these free and natural exercises must be regulated and measured as much as methodical exercises, and that the principal of progressive training must here be more rigorously applied than ever. On this condition only will exercise be a useful aid in the treatment of nervous exhaustion.

If this rule be not absolutely obeyed, the simplest and most natural exercise, a walk for example, will not fail, if continued for too long, to produce overpressure and thereby an aggravation of the patient's state. The principle of the method recommended by Oertel in the treatment of obesity seems to us to be in every respect applicable to the regulation of the physical exercises permitted to neurasthenics.

PART VII.

TREATMENT OF SOME CLINICAL FORMS OF NEURASTHENIA.

CHAPTER I.

NEURASTHENIA OF WOMEN—WEIR MITCHELL'S SYSTEM OF TREATMENT.

We have already sketched the clinical picture of the special form of nervous exhaustion known as *neurasthenia of women*, so we need not describe it again here, but shall merely recall its essential features. The patients are in an extremely profound state of moral depression; discouragement, powerlessness of will, and muscular asthenia are so marked in these women that they are incapable of any effort; they languish in perpetual inactivity and remain constantly in bed or on the sofa. So much for their mental state, as to their physical condition, it is usually quite as wretched. Though some of them preserve a certain plumpness, the majority are considerably anæmic and emaciated, for, owing to existing or previous dyspepsia, they have accustomed themselves little by little to eat insufficiently, either

because they fear the feelings of malaise that accompany the work of digestion, or simply because they have lost the courage to eat; for their anorexia is often of the same nature as that of hysterical subjects, that is to say it depends much more on the mental condition than on any real derangement of the digestive functions. Dr. Weir Mitchell has observed and described these cases in a remarkable manner. This author's merit lies precisely in having been able to perceive the two fundamental elements of the morbid group of symptoms that characterises the neurasthenia of women: the mental asthenia, and the denutrition of the body that follows on insufficiency in the amount of food taken; these lend one another mutual support and combine in keeping up indefinitely the nervous exhaustion. It was cases of this kind that Weir Mitchell had in view when he formulated the rules of the systematic treatment that now bears his name. The characteristic of this treatment is that it is directed simultaneously and methodically to the mental and physical condition of the patient; it thus fulfils in the happiest manner the double therapeutic indication in the treatment of the neurasthenia of women: to restore fat and blood to these emaciated and anæmic women, in order to revive permanently the nutrition and activity of the nervous centres, and at the same time to rouse their moral energy, for the enfeeblement

of the will is an obstacle to the success of all therapeutic measures.

This mode of treatment has already given proof of remarkable efficacy, and although it is applied to serious and inveterate forms of neurasthenia, it has already placed many cases of cure to its credit; it has caused the superiority of physical agents over drugs to be better appreciated, and the importance of moral treatment to be more strongly felt. In this way it has been the origin of the progress accomplished during these last few years in the treatment of nervous exhaustion.

We shall set forth Weir Mitchell's method as faithfully as possible. What constitutes its originality is the rational association of the different hygienic and therapeutic agents that have been proposed for nervous exhaustion, the systematic combination of isolation, rest, massage, electricity, and a special dietary tending to fatten the patient by overfeeding.

Isolation is necessary. It is an indispensable condition to the success of the treatment. It must be complete, rigorous, and continued to the end of the treatment. Hence the patient must be taken away from her home and deprived of all communication, personal or written, with her family. Dr. Weir Mitchell has rightly insisted on the necessity of imposing this measure on the patient and her friends. Comparative isolation

is worthless; it causes the failure of the treatment all the more surely the older and more serious the affection is. "Once separate the "patient," writes Weir Mitchell, "from the moral "and physical surroundings which have become "part of her life of sickness, and you will have "made a change which will be in itself beneficial "and will enormously aid in the treatment which "is to follow. Of course this step is not essential "in such cases as are merely anæmic, feeble, and "thin, owing to distinct causes, like the exhaus-"tion of overwork, blood-losses, dyspepsia, low "fevers, or nursing. . . . I am now speaking "chiefly of the large and troublesome class of "thin-blooded emotional women, for whom a state "of weak health has become a long and, almost I "might say, a cherished habit. For them there "is often no success possible until we have "broken up the whole daily drama of the sick-"room, with its little selfishness and its craving "for sympathy and indulgence. Nor should we "hesitate to insist upon this change, for not only "shall we then act in the true interests of the "patient, but we shall also confer on those near "to her an inestimable benefit." Thus then it is really necessary to remove the patient from the surroundings in which she has suffered for so long, and from the exaggerated cares, the incessantly renewed commentaries on her discomforts and disorders that are showered on her by those about

her, and the only result of which is to cultivate the state of mental depression and discouragement that keeps up and aggravates her illness.

Whenever it is possible, the patient should be placed in a special establishment where there is a physician who will supervise the carrying out of the therapeutic measures of which the treatment is composed. A nurse should be told off to attend her. The choice of this nurse is not a matter of indifference; the success or failure of the treatment may depend on it. The nurse's functions are of the highest importance; she must not only be sufficiently trained to execute the physician's orders satisfactorily; she must also be well enough endowed in respect of intelligence and character to understand thoroughly the task she has undertaken, and to bring to it all the tact and firmness required. It must not be forgotten that this woman will be for weeks and for months the patient's only companion. She must be amiable and kindly enough not to inspire her charge with hatred or aversion, skilful enough to distract her by conversation and reading, and to help her to support patiently both the details of the treatment ordered and the weariness of a long isolation; and finally, firm and intelligent enough to have a certain ascendency over her, and to impose on her without harshness the discipline of the treatment. It is easy to see that it would be absurd to give to a woman of cultivated

mind a nurse who was altogether illiterate and uneducated, or as we have occasionally seen done, a quite young girl without experience or authority.

When thus separated from the outer world, the invalid must receive no other visits than those of her doctor. It is the latter's business to exert that suggestive and cheering action on the patient's mind that is so necessary for the raising of her moral energy, and to restore to her by his words and his bearing the confidence she has lost and the will to get well. We have already mentioned how delicate and difficult this task of the physician's is, and how much patience and tact it requires.

It fairly often happens that the isolation is badly borne by the patient during the first days that follow her sequestration. The neurasthenic disorders become worse, and the patient grows enervated and agitated, and demands imperatively to be taken home. But all this emotion and this agitation are quickly calmed if by his language and bearing the physician makes her feel that her supplications are useless, and that she will revolt in vain against an enlightened will that is superior to her own. The greater number of patients soon adapt themselves to their new existence, and moreover the hours of the day are easily filled up by meals, the applications of massage or electricity, the doctor's visits, conversation and

reading, which break at regular intervals the monotony of the seclusion.

The time the isolation lasts necessarily varies in different cases. The average is two to three months. The isolation should not come to an end till the patient's mental condition is profoundly improved, and she has regained such moral energy and activity of mind that she can resume her occupations and her normal life without giving way under them.

Rest is another element of Weir Mitchell's treatment which is quite as indispensable as isolation. During the early weeks of the treatment it must be complete, absolute. The patient is placed in a state of total inactivity; she is kept in bed; comparative silence is imposed on her; all active occupation is forbidden her; she must neither get up nor make use of her own hands under any pretext. The nurse must feed her, lift her if need be, treat her in fact as if she were suffering from a grave adynamic fever. The American author insists on the necessity of this absolute rest of the intellect, the senses, and the muscular system. This condition, he says, is eminently favourable to the repair of the nerve centres, the restoring of the motor force, and the soothing of painful sensations. Moreover, as soon as the patients commence to feel its salutary influence, they begin to desire movement, and to wish ardently for their return to activity, and this

disposition of the mind is a further valuable adjuvant to the treatment of muscular asthenia.

But if immobility has its advantages, it has also serious inconveniences; it tends to diminish the appetite, to increase the gastro-intestinal atony and the constipation, and finally to maintain the peripheral circulation in a state of torpor, injurious to the general metabolism. It is to obviate these disadvantages that Weir Mitchell has very ingeniously associated massage and faradisation of the muscular masses with rest in bed.

Massage must be carried out, as far as possible, by the nurse. It acts on the skin, the circulation and secretions of which it invigorates, and on the muscles by stimulating their action and thereby their nutrition. It also causes a marked acceleration of the heart, and even a slight increase in the excretion of urea (Weir Mitchell). It is performed as follows. After coating the cutaneous surface with vaseline or oil of sweet almonds made slightly aromatic, the first manipulation is practised; this consists in pinching and rubbing the skin, which is taken between the thumb and the other fingers so as to be freely moved over the subcutaneous cellular tissue. It is necessary to act very gently at first; then the force and duration of the mechanical effort are progressively increased. The frictions must be performed with the ulnar border or with the flat of the hand, and must proceed from the distal to the proximal

extremity of the limbs. To knead the muscles, the different parts of them are worked over with the carpal regions of the hands or the external borders of the thumbs; then percussion is applied with the ulnar border of the hand, the blows being slight and quick. During these manipulations the patient must be entirely submissive, and must refrain from resistance: her muscles must be in a state of complete relaxation, and therefore the different segments of the limb must be placed in the position most favourable to relaxation. The manipulations must be carried out successively on the different segments of the limbs, and on the muscles of the back and abdomen. The muscles of the face and neck only are to be spared.

Massage of the abdomen acts efficaciously against constipation. It consists in a series of operations of friction and pressure, gentle at first, then more and more energetic, and carried along the large intestine, following the direction of the ascending, the transverse, and the descending colon.

Finally it is necessary to apply passive movements as extensive as possible to the different joints.

In the serious cases of neurasthenia with which we are now dealing, the applications must be short at the beginning of the treatment; twenty minutes are enough at first, and then the time is steadily increased—but it must never exceed

three quarters of an hour or an hour at most. The applications must be daily. If well carried out, massage produces neither pain nor excessive fatigue. In the regions which are the seat of hyperæsthesiæ or of pains, it is of course necessary to proceed with much gentleness, at least in the early applications. The patients soon become accustomed to the treatment, and after some days they support energetic friction and pressure in parts where the slightest touch was formerly enough to produce sharp pain.

Faradic electricity applied to the masses of muscles, by bringing about repeated contractions, produces effects almost identical with those of massage. Weir Mitchell recommends slowly interrupted currents as being better borne than those rapidly interrupted. If massage is practised in the morning, faradisation is applied in the afternoon. The length of the application is about twenty to thirty minutes.

All these manipulations, all these mechanical stimulations applied to the skin and muscles, help to produce the same effect. they maintain the activity and nutrition of the muscles and joints while leaving the nerve centres in complete idleness; they are in reality passive muscular exercises, the good effects of which make themselves felt in the digestive functions, the circulation and the general nutrition, in other terms they are a mode of gymnastics in the carrying

out of which the encephalic and spinal nerve-centres take no part.

The duration and the arrangement of rest and massage, as carried out by Weir Mitchell in the treatment of the serious form of neurasthenia, are as follows. The patient is kept at complete, absolute rest for the first few days; after seven or eight days of immobility she is allowed to sit up in her bed for one, two, or three hours daily. Towards the end of the third or fourth week she is permitted to get up and remain sitting for one or two hours either in the morning or in the afternoon; in the second half of the second month she is allowed to be up for six or eight hours, and it is then that the patient begins to walk. Her walks are limited at first to a few steps. It is advisable for the physician to be present at these early attempts, in order that he may himself regulate the manner and duration of them in such a way as to increase the muscular exercise progressively.

In the third month the invalid has become a convalescent, and little by little regains the full activity of a woman in good health, and in favourable cases she is then bidden to return to ordinary life. But it is clear that there are no absolute rules, and that the amount of rest and of exercise must be measured, at the time when improvement declares itself, according to the indications of each individual case.

As to massage, it is advisable not to have recourse to it till after five or six days of complete rest. The applications are at first to be made daily and to be very short (from 20 to 30 minutes); then the duration is to be steadily increased till it becomes one hour. Towards the end of the treatment, when the patient begins to walk, the applications are shortened again to half an hour, and then they are made on alternate days only. Massage and faradisation are stopped altogether when the patient is able to be up and about during the whole day.

Dietary; overfeeding.—This dietary is of great importance, but, before beginning it, it is indispensable to examine the condition of the gastric functions. It is well borne when the patient is only affected with gastro-intestinal atony, and better still when the anorexia is almost exclusively dependent on the mental state, and in fact, like hysterical anorexia, is merely of the nature of a fixed idea. On the other hand the method must be applied with more prudence and moderation in dealing with an invalid who has long suffered from dyspepsia, and who has arrived at the stage of permanent dilatation with stasis and acid fermentations. In cases where the dilatation is eventually complicated by catarrh of the stomach, it seems to us preferable to aim at improvement of the gastric functions, and to obtain it by local treatment adapted to each case,

before subjecting the patient to Weir Mitchell's dietary. The following are the dietetic precepts formulated by that author. In almost every case we begin with a milk diet. The patient drinks 4 or 5 pints of milk daily, taking half a pint at a time every two hours.[1] After seven or eight days of milk diet she takes a light lunch at noon, consisting of a cutlet. Then, at the end of three or four days more, the amount of food is progressively increased by adding a slice of bread and butter two or three times a day. About the tenth or fifteenth day the invalid takes three complete meals, but still drinks 3 or 4 pints of milk, either at meals or in the intervals. From the twentieth day she is also given at meal times about 4 oz. of liquid malt-extract with the object of aiding digestion. Beef-tea may also be prescribed; this is prepared in the water-bath, several drops of Hydrochloric Acid are added, and the infusion is filtered.

Dr. Weir Mitchell considers that butter should play a large part in the alimentation. In winter he prescribes one or two ounces of cod-liver oil, and if this fatty substance is badly borne by the stomach, he orders it to be taken as an enema mixed with an infusion of pancreas prepared at a temperature of 140° to 176° F. Finally he

[1] Weir Mitchell says: "It ought to be given at least every two hours, at first in quantities not to exceed four ounces. . . . I increase it in a few days up to two quarts, given in divided doses every three hours." *Fat and Blood*, 7th edition, pp. 111, 124.—*Trans.*

allows a certain amount of alcohol in the form of a few drops of whisky or two glasses of champagne.

All the drugs, bromides, chloral, morphine, etc., that these patients are for the most part accustomed to use and even to abuse, must be suppressed. Weir Mitchell limits himself to advising one or two grains of aqueous extract of aloes to be taken in the evening if there be constipation. He also prescribes iron in cases of anæmia.

Such is the mode of treatment recommended by the American author in grave and inveterate forms of the neurasthenia of women. It aims, as we said in the beginning of this chapter, at the two main symptoms of that neurasthenic condition, namely the depression of the moral energy and the will, and the emaciation and anæmia caused by insufficient alimentation. If one reflects a little on the indications given by such a group of symptoms, it will be recognised that these indications are perfectly fulfilled by this treatment, a treatment from which drugs are excluded and in which psychical and hygienic therapeutics do all the work.

In England Dr. Playfair has helped largely to spread Weir Mitchell's treatment. In France, Charcot, M. Bouveret, and some other clinical observers (ourselves among the rest) have also tried it with success. If it sometimes produces only a temporary improvement, in a very large

number of cases on the other hand it has caused complete and definite cure. Hence we may confidently proclaim its very real value.

In Germany, Leyden, Binswanger, and Burkart have modified Weir Mitchell's dietary more or less happily.

Leyden recommends the following regimen of over-feeding:

Morning.

7 a.m.	Two tumblerfuls of milk, to be taken in 30 minutes.
8	One small cup of coffee with cream, 3 oz. of cold meat, 3 slices of white bread and butter, 1 plate of fried potatoes.
10	Two tumblerfuls of milk, 3 rusks.
Noon	Two tumblerfuls of milk.

Afternoon.

1 p.m.	Soup; 7 oz. of chicken. Potatoes; vegetables; stewed fruit. Pastry.
3.30	Two tumblerfuls of milk.
5.30	3 oz. of roast beef; 2 slices of white bread and butter.
8	Two tumblerfuls of milk.
9.30	Two tumblerfuls of milk, 1 rusk.

To patients who feel a strong aversion to milk, Binswanger recommends the following dietary:

During the first and second week of treatment:

7 a.m.	5 oz. of cocoa made with milk.

9 a.m.	1 cup of beef-tea, 1 oz. of Graham's bread (whole-meal bread), and ⅓ oz. butter.
11	1 glass of white Hungarian wine and the yolk of 1 egg.
1 p.m.	3 or 4 oz. of soup; 1 lb. of roast beef, ⅓ oz. of potatoes, ¼ oz. of other vegetables; ¾ oz. of rice pudding.
4	Two tumblers of milk.
6	¾ oz. of meat, ¾ oz. of bread, ⅙ oz. of butter.
8	A breakfast cupful of soup with the yolk of 1 egg.
9.30	A tumblerful of milk.

And during the third, fourth, fifth, and sixth weeks:

7 a.m.	5 oz. of cocoa made with milk.
9	1 cup of beef-tea; 2 oz. of meat; 2 oz. of Graham's bread; ½ oz. of butter.
11	1 glass of Hungarian wine and the yolk of 1 egg.
1 p.m.	1 oz. of soup; 3 oz. of roast meat; 2 oz. of potatoes; 1¼ oz. of vegetables; 2½ oz. of pudding with sugar; 2 oz. of stewed fruit.
4	A breakfast cupful of cocoa.
6	4 oz. of roast meat; 2 oz. of bread, ½ oz. of butter.

8 p.m. A breakfast cupful of soup (with ¾ oz. of butter and the yolk of 1 egg); stewed fruit.

9.30 Two tumblerfuls of milk.

These authors have also endeavoured, but without success, to formulate precisely the indications and contra-indications of the method. Burkart and Leyden consider that isolation away from the family is a bad condition for patients who show symptoms of excitement; and that Weir Mitchell's systematic treatment does not suit either cerebrasthenics or those suffering from visceral pains or from neuralgic pains in the limbs. Burkart rightly calls attention to the fact that if the patients are to benefit by Weir Mitchell's treatment, they must have some understanding of the end pursued. This author moreover has applied the method to almost all forms of neurasthenia in men and women. In his latest publication[1] he gives the results that he has obtained in 43 cases. Out of these 43 cases 31 have been cured, but these figures include some cases of hysterical affections.

To sum up, we believe that till we have gained further knowledge the best plan is to adhere to the indications laid down by Dr. Weir Mitchell and Dr. Playfair.

1 Burkart.—*Die Behandl. der Hysterie und Neurasthenie, Berliner Klin. Wochenschrift*, 1891, No. 47.

CHAPTER II.

TREATMENT OF GENITAL NEURASTHENIA.

The treatment of this form must aim more especially at improving the physiological condition of the genital organs, and above all at modifying the patient's mental state which is always profoundly disordered. Local treatment is here of great importance. Beard, in his monograph on genital neurasthenia, insists at great length on this point. And certainly it is right to check the urethral discharge when chronic blenorrhagia has been the starting point of the nervous disorders, to treat prostatic catarrh, and to combat, according to the case, either the increased excitability or the atony of the centre for erection or the centre for emission. But it seems to us indispensable to start psychical treatment from the very first. The patient's mental condition must be acted on as energetically as possible, because this mental condition causes and controls a large part of the functional disorders of the genital organs. The psychical treatment of the invalid should, we think, precede the application of the various procedures intended to act on

the local condition; otherwise it will frequently happen that all the details of treatment prescribed with the object of diminishing the irritability or increasing the tone of the genital organs, will only aggravate the patient's uneasiness by confirming his belief in the gravity or the incurable nature of his functional troubles. If care be not taken to prepare his mind before subjecting him to the local applications of hydrotherapy or electrotherapy that are indicated in such cases, one will run the risk of cultivating instead of combating his hypochondriacal ideas, of augmenting his genital impotence, in short, of arriving at a result exactly the contrary of that desired.

The patients with whom we are dealing here are in a constant state of depression; their minds are dominated by a feeling of humiliating inferiority, and their depression is mixed with a certain amount of shame. If masturbators, they believe themselves unable ever to give up their evil habit; those who have fallen into neurasthenia from excessive sexual intercourse, and those who are affected with comparative impotence, believe themselves threatened with irremediable loss of their virility, or else with an incurable disease of the spinal cord; the seminal losses and the discharges of prostatic fluid to which they are frequently liable, affect them keenly; some imagine that these losses exhaust them,

others that they are due to some grave lesion of the internal organs, and when these symptoms develop themselves in young men who are in a position to marry before long, the mental upset that follows is complete. The physician must set himself to reassure these patients; to explain to them that the functional disorders from which they suffer are perfectly curable; and to make them understand the part played by their mental attitude and their worries in developing and keeping up these disorders. The comparative impotence that sometimes accompanies the phenomena of excitement of the initial stage, is of psychical nature; those affected with it must be reassured by being reminded that they are capable of experiencing erections when alone, and that the cause of their impotence at the moment of coitus lies principally in the moral fear and agitation with which they enter upon the sexual act. As to the neurasthenics suffering from real genital atony and absolute impotence, we think that one ought to combat the strong hypochondriacal preoccupations of which this impotence is the source, by proving to them, as M. Ultzmann advises, that they are still capable of strong erections. For in fact it is possible to excite erection in these patients by applying either the continuous or the faradic current according to Duchenne's method (one of the poles being placed in the rectum, the other applied over the bulb of the urethra). It

must not be forgotten that it is sometimes imperatively necessary to restore the patient's confidence in himself, since the despair into which this functional incapacity plunges him may lead to suicide.

When the patient is reassured, when statements and procedures, which must evidently vary with each particular case, have caused the conviction to spring up in his mind that his affection is not serious but is perfectly curable, he is thenceforward ready to follow and to benefit by the local treatment that must then be prescribed to him.

In order to combat the symptoms of excitement that are generally observed in the first period of genital neurasthenia, such as frequent erections, nocturnal pollutions, etc., it is necessary first of all to draw up for the patient a set of suitable hygienic rules. He must of course give up his habits of masturbation, and avoid company and contacts that are liable to give rise to erotic thoughts and keep up the genital excitement. Riding, excessive food, rich dishes, spirits and coffee in excessive quantities, staying too long in bed, must all be forbidden him, and constipation must be carefully treated. Continence should not be absolute, but sexual intercourse is only to be permitted at long intervals.

Among the hydrotherapeutic measures that are suited for calming spinal excitability, we may

make use of the warm douche at 96° or 97° F., applied to the whole body, especially to the vertebral column, sitz baths, or prolonged warm baths, or ice-bags applied to the dorso-lumbar spine.

Hydrotherapy again forms the principal local treatment of spermatorrhœa and of true impotence due to atony of the nerve centres and muscles concerned in erection and emission.

When one has to deal with very sensitive subjects who complain of pains or hyperæsthesiæ localised in the genital organs, one must proceed with prudence in applying hydrotherapeutic measures locally. Sitz baths with still water are to be administered, first temperate, then cool, and finally cold. Thus one will arrive progressively at the use of cold baths with jets of water (perineal douches or douches localised to the region of the genito-urinary centre in the spine). Beard recommends cold enemata.

Winternitz has recommended the use of the *psycrofore* in the treatment of spermatorrhœa and atony of the genital organs. This is a sort of metallic catheter with a double channel, which enables the prostatic portion of the urethra to be subjected to the local action of cold. This catheter is closed at the urethral extremity and bifurcated at the other. When it is placed in position, a current of water is made to circulate through it at a temperature of 65° F., lowered steadily to 55° or 50° F. The irrigation lasts from eight to

twelve minutes. The first applications are badly borne in general, but tolerance is soon established, and this mode of treatment frequently produces excellent results.

In the treatment of these cases of genital atony, one may also apply local galvanisation according to the method of Benedikt and Schultz. A weak current is used; the positive pole is held over the upper lumbar vertebræ, and the negative is moved over the perineum, the spermatic cords, and the penis in succession. The application is continued for from three to four minutes and is repeated every day or every second day. Faradisation seems more efficacious; all the accessible muscles of the perineum are faradised in succession, and especially the bulbo-cavernosi, or else one of the poles is placed in the rectum and the other on the perineum and the root of the penis.

The action of these local methods of treatment must of course be seconded by putting into operation the various hygienic measures that are required in the general treatment of neurasthenic conditions.

As to pure *traumatic* neurasthenia it does not appear to us to offer any special therapeutic indications. The treatment of this etiological variety of nervous exhaustion differs in no essential point from that of cerebro-spinal neurasthenia in general.

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