

On the treatment of diseases of the nervous system.

Contributors

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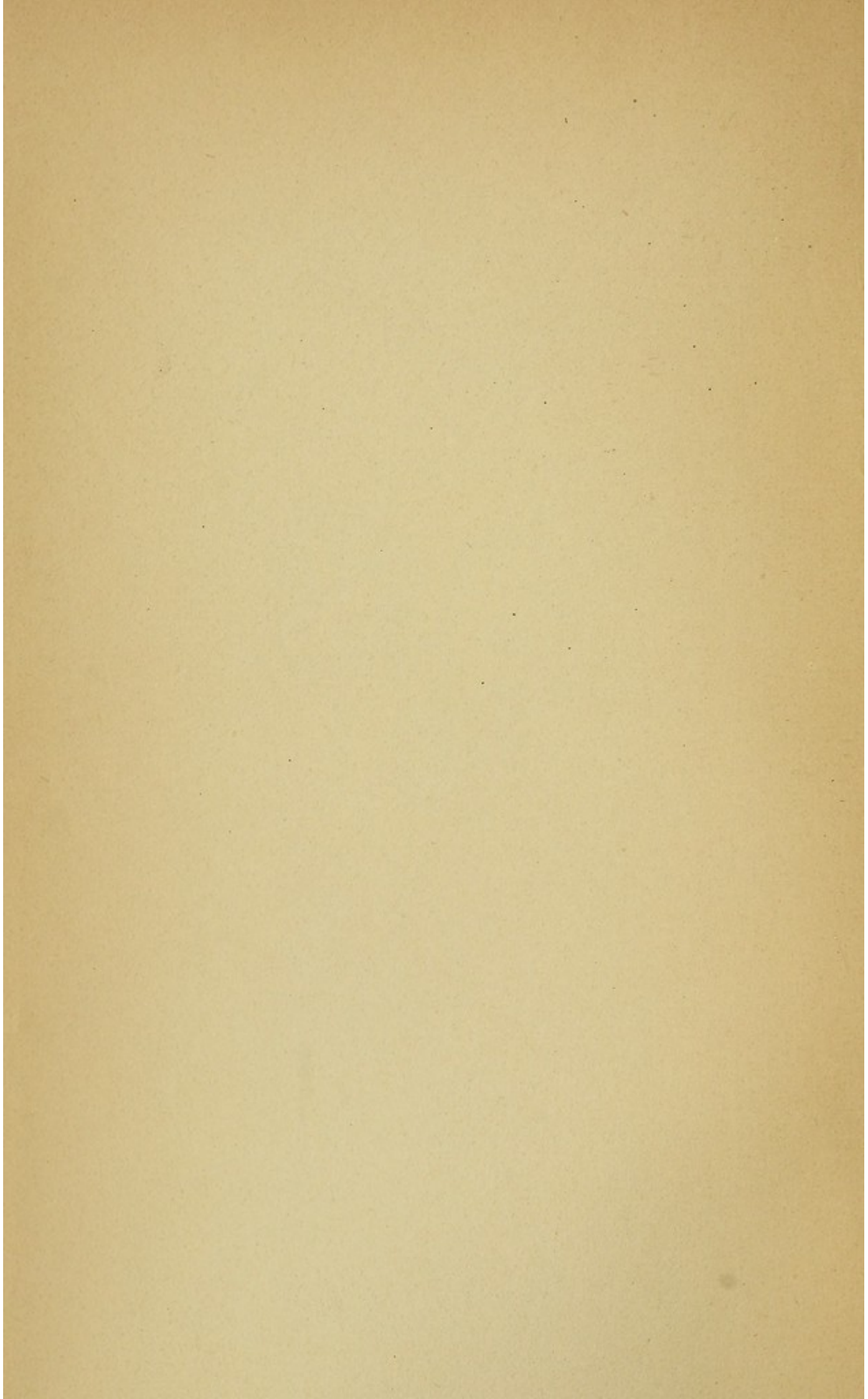
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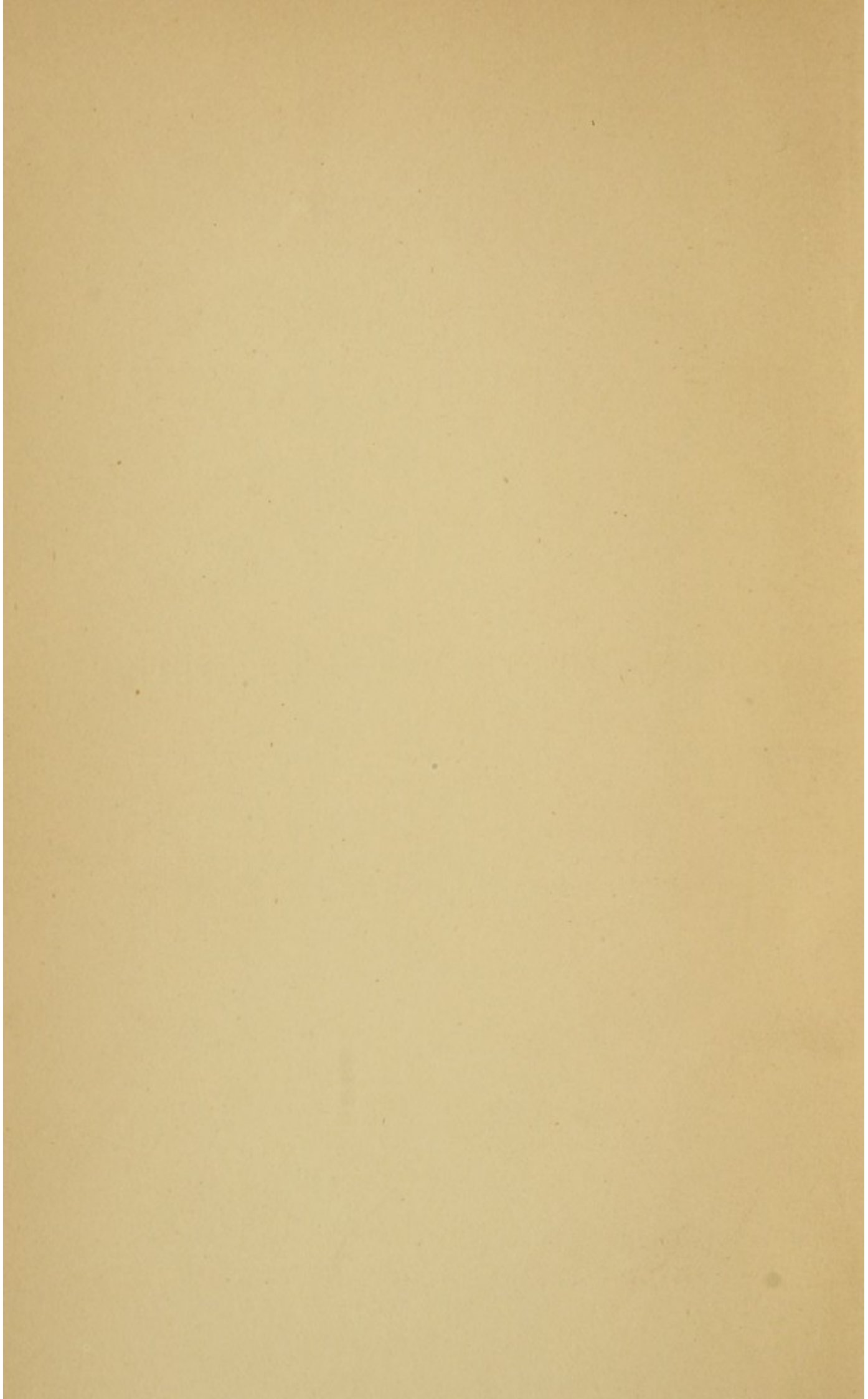
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DISEASES OF THE NERVOUS SYSTEM.



ON THE TREATMENT OF
DISEASES
OF
THE NERVOUS SYSTEM.

BY

C. W. SUCKLING, M.D. (LOND.), M.R.C.P.,

PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS AT THE
QUEEN'S COLLEGE;

PHYSICIAN TO THE QUEEN'S HOSPITAL;

EXTRA-ACTING PHYSICIAN TO THE CHILDREN'S HOSPITAL;

PHYSICIAN TO THE WORKHOUSE INFIRMARY;

AND

CONSULTING PHYSICIAN TO THE ORTHOPÆDIC AND SPINAL HOSPITAL,
BIRMINGHAM.

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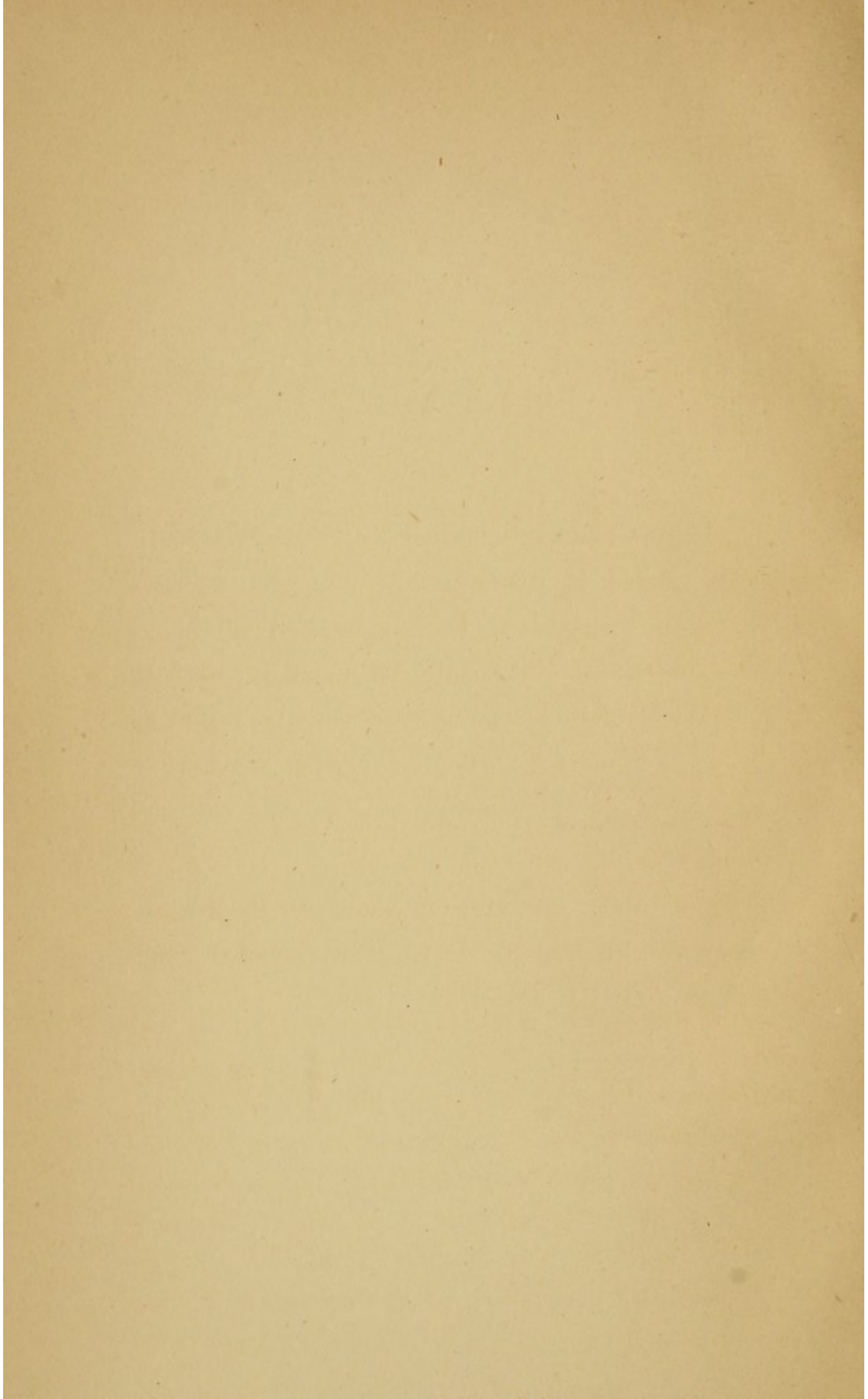
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PREFACE.

Many professional friends have expressed their regret that the subject of treatment was not included in my book on the Diagnosis of Diseases of the Brain, Spinal Cord, and Nerves. This little volume is intended to supply the deficiency, and is based on the results of an extensive clinical experience. My aim has been to render it, as far as possible, a short and practical Handbook of Treatment.

I must express my great obligation to my friends, Professor Windle and Mr. David Walsh, for their kindness in preparing the sheets for the press.

103, NEWHALL STREET,
BIRMINGHAM,
July, 1890.



TREATMENT OF DISEASES OF THE NERVOUS SYSTEM.

ABSCESS OF THE BRAIN.—Medical treatment is of little avail in this condition, but much may be done in the way of prevention.

The subjects of chronic otorrhœa should avoid cold, injuries to the head, and bathing, especially in sea water, and they should be under medical supervision. A free discharge should be ensured ; and it is of the greatest importance to keep the discharges free and sweet, hence antiseptic injections are of great service.

In any case of chronic ear disease where the discharge has recently ceased, or in which cerebral symptoms have supervened, the external auditory meatus should be carefully examined, and if any polypus be discovered, it should be removed and a free exit afforded for the discharges.

If there be any tenderness of the mastoid process, leeches afford great relief. Ice to the head and counter-irritation with iodine or blistering fluid are useful. The patient should be kept in bed and given milk only. Purgatives are indicated

and afford relief. Alcoholic stimulants should not be given unless the pulse is slow and feeble. Should there be marked œdema over the mastoid process, a free incision is called for, to be followed by trephining of the mastoid cells, all caseous material being removed, and the tympanum must be thoroughly cleansed with an antiseptic solution. Should these measures fail to give relief, and the diagnosis of cerebral abscess be certain, the skull should be trephined. In the great majority of cases the abscess will be found in the temporo-sphenoidal lobe on the side of the diseased ear, or when both ears are diseased, its situation will be disclosed probably by slight hemiplegia of the opposite side, tenderness of the skull or dilated pupil on the side of the abscess, or by the presence of some form of aphasia, word deafness, &c., when the abscess is on the left side. Mr. Barker has shown that the proper point for trephining is situated one inch and a quarter above, and the same distance behind the centre of the bony meatus of the ear.

Several successful cases of trephining for cerebral abscess, resulting from chronic ear disease, have been recorded. When there is suppuration of the mastoid cells with marked œdema over the mastoid process with external suppuration, it is probable that the abscess is in the lateral lobe of the cerebellum. The trephine must be applied then to the occipital bone in one or other inferior occipital fossa. Should the abscess be situated in

the substance of the brain, the dura mater being healthy, then the abscess having been found and drained, it is probable that recovery will follow ; but should the abscess be diffused and situated between the bone and the brain substance, then the dura mater and the bone will be found to be necrosed, and trephining will probably not save the patient. The prognosis is much better in the case of traumatic abscesses which can be localised, but the mortality in all such operations is very high ; nevertheless the operation is one that must be performed as soon as an abscess is diagnosed and localised.

Paroxysms of intense headache may be relieved by antipyrin or phenacetin, in five grain doses, frequently repeated, and, if necessary, by morphine injections. The pain is so severe in these cases, especially when pachymeningitis is present, that it is a source of danger to life, and may kill the patient by its intensity.

Delirium may be treated by the ice bag, bromide of potassium or ammonium and chloral. Tincture of aconite or veratrum viride may be given in small doses to relieve vascular tension. Indian hemp has been recommended in these cases for the relief of severe headache and delirium. The head must be shaved, and when blistering fluid is used it should be applied in the sub-occipital region. For the multiple abscesses that occur in the brain in pyæmia, little or nothing can be done

beyond attending to the primary focus of mischief, *e.g.*, in empyema, the opening and free drainage of the abscess. Quinine and bichloride of iron are the best internal remedies.

Boracic acid lotion is useful for syringing the ear in chronic cases. Iodoform or iodol may be insufflated into the ear after thorough cleansing.

ACCOMMODATION, PARALYSIS OF.—CYCLOPLEGIA.—This condition is very rare except after diphtheria. The pupils may, or may not, be affected simultaneously. It may be the first paralytic symptom after diphtheria, and may be the only symptom disclosing the nature of the case. Strychnine and iron are the drugs indicated.

ACUTE ASCENDING PARALYSIS.—The treatment for this rare disease is the same as that for acute myelitis. Absolute rest in bed in the prone position, vapour baths, and counter-irritation to the spine by mustard plasters applied in strips along the entire length of the cord are necessary. Salicylate of soda and ergot may be given; the latter freely. Belladonna also is indicated. Chapman's ice bag may be applied, or dry cupping employed. Active counter-irritation seems to have been most successful. If there is any history of syphilis, and this should always be sought for, then iodide of potassium and mercury must be freely administered. Should swallowing be interfered with, the patient must be fed by means of a tube.

ACUTE ATROPHIC SPINAL PARALYSIS (Poliomyelitis Anterior Acuta). INFANTILE PARALYSIS.—This disease is most common in children under two years of age. It often seizes them while in robust health. Children should be carefully protected from excessive heat and cold. They should not be allowed to play too much in the sun, nor lie on damp grass. Over-exertion, falls and blows are thought to be exciting causes of disease. In the acute febrile stage the child must be kept in bed absolutely at rest. The prone position is the best, but the child may be allowed to lie on one or other side. A febrifuge mixture with aconite may be prescribed. Belladonna and ergot or ergotin should be given, and, if convulsions occur, warm baths. A hot water bag may be applied to the spine; purgatives must be given if necessary. For a week at least, the child should not be disturbed, and tonic treatment, with galvanism, must not be employed till three weeks have elapsed from the date of onset. Then iron and quinine may be given with pilules of phosphorus, strychnine, and calabar bean combined; the doses being proportionate to the age. Cod-liver oil is often of use. Galvanism must be applied daily to the affected muscles, a current of just sufficient strength to cause contraction being employed; descending currents seem to do most good. Systematic rubbing is of more value than galvanism, and is of

great importance. The mother should be instructed how to rub the child, and the operation should be performed twice a day for at least twenty minutes. Warm clothing is essential, and every endeavour must be made to keep the limbs warm. Hot bottles must be used in the perambulator, care being taken not to burn the child; the affected limbs may be wrapped in cotton wool. It is of the utmost importance to prevent, as far as possible, muscular contracture and resulting deformity—this may be done by appropriate rubbing and mechanical appliances, which are often of great value. It is important to use any apparatus which will enable the child to walk about.

The treatment of the adult variety of the disease is similar to that appropriate for the infantile.

AGORAPHOBIA: A dread of open spaces.—In this condition there is an inability to walk in an open space, the patient being able to walk in narrow passages and in rooms. It usually occurs in neurasthenic subjects. Nervine tonics and the bromides, the latter in moderate doses, are useful. A quiet, placid life, and avoidance of the exciting causes, such as sexual excess, worry, &c., are necessary. The subjects of this complaint are often anæmic, and require iron. One case brought under my notice was cured by a six months' residence at the seaside.

ALCOHOLIC ATAXIA AND PARALYSIS.—It is difficult to estimate the value of

drugs in this disease, for probably the mere withdrawal of alcohol is quite sufficient for the cure of most cases. All the subjects of this disease must be placed under proper supervision, and deception must be expected and looked for. In all cases where improvement does not take place, a careful search should be made in the patient's room, and under the pillows and mattresses for concealed bottles, and in all cases there should be a nurse in constant charge of the patient whom the doctor can trust. In ordinary cases all alcohol should be at once stopped, but in severe cases it should be gradually diminished. I have several times observed rapid heart failure after the abrupt discontinuance of alcohol. The ultimate fate of the patient depends, of course, upon her or himself, and the prognosis is as a rule unfavourable, for, as soon as such patients are able to get about, they are out of control, and in the majority of cases resume their drinking habits, with an ultimately fatal result. Compulsory detention in a home for inebriates is the only chance for such patients, and thousands of lives are lost annually through the present inadequate state of the law, which does not provide for the compulsory detention of confirmed inebriates.

The following are the chief points to be observed in the treatment. Rest in bed is essential in acute cases ; as recovery takes place, the patient should be encouraged to attempt to move the toes

and feet. Anodyne liniments are useful to relieve pain, and the painful limbs should be wrapped in cotton wool. The following ointment is a useful application:—

R. Ext. Bellad.

Glycerini

partes æquales.

M. Fit. ung. To be smeared on daily.

The application of blistering fluid along the painful nerves sometimes does good. Careful attention to the position of the limbs is necessary; a roller should be placed under the feet so as not to allow them to drop, and the pressure of the bedclothes should be removed when necessary by a cage.

Hot poultices are called for when the pain is severe. In some cases hypodermic injections of morphine or cocaine are necessary. Internally, strychnine does good, and should there be a rapid and weak pulse, digitalis and ammonia must be given with a bitter infusion. If cramps prevent sleep, a sleeping draught of bromide of potassium and chloral may be given. After the acute symptoms have subsided massage and galvanism are useful.

In alcoholic vomiting, liquor arsenicalis and tincture of capsicum, in one minim doses, in a bitter infusion, frequently repeated, do good.

ALCOHOLIC DELIRIUM, DELIRIUM TREMENS, OR ACUTE ALCOHOLISM.—The patient must be put to bed in a darkened

room, and must be under the care of an attendant, who should be instructed to coax and soothe the patient, and not to oppose him unless necessary. Great care should be taken that the patient does not injure himself, especially in the night when his terror is at its maximum. Windows should be securely fastened, and the patient should not be left for a moment. In one case under my care, the attendant having left the room, on his return found his patient missing, who was eventually discovered up the chimney. It is of primary importance to get the patient to take plenty of nourishment in a liquid form, *e.g.*, milk, beef tea, eggs beaten up, Benger's food, Valentine's meat juice, &c. Should the patient refuse food, or be unable to retain it, peptonised enemata must be administered. Large quantities may be given in this way if properly managed. The rectum and colon should be cleansed by an aperient enema, and then, the patient lying on the left side, with a pillow under the buttocks, a long tube should be passed, and half a pint of peptonised beef tea and milk mixed may be injected. The patient must be kept as quiet as possible after the injection, or it may not be retained. The enema may be repeated every four hours. Alcohol should not be given in these cases unless the pulse is very feeble, and even then ammonia, ether, and digitalis are to be preferred.

The next great indication is to procure sleep, or, at any rate, to quiet the agitation. Great care

must be taken in the administration of narcotics. Bromide of potassium combined with chloral, frequently repeated, usually suffices, except in bad cases.

R. Potass. bromid. gr. xx.

Chloral hydrat. gr. x.

Aquæ camph. ad $\bar{z}$ i.

To be taken every two hours.

It is much safer to give chloral in small doses, frequently repeated, than in one large dose. Morphine, if given at all, must be administered hypodermically, and the dose should not be larger than $\frac{1}{4}$ grain, though this may be repeated, if necessary, after a short interval.

Capsicum is a safe remedy, and will often procure sleep after the bromides with chloral have failed.

R. Tinct. capsici $\bar{z}$ i.

Syrupi aurantii $\bar{z}$ i.

Misce.

Sig.

A teaspoonful to be taken every three hours in a little water.

In very acute and violent cases hyoscyamin will procure sleep in a few minutes. The dose is from $\frac{1}{24}$ th to $\frac{1}{12}$ th of a grain hypodermically.

R. Hyoscyamin. gr. i.

Spirit. vini rectific. $\bar{z}$ i.

Aquæ distil. $\bar{z}$ i.

Sig. Five to ten minims hypodermically.

If there should be any pulmonary complication present, neither hyoscyamin nor morphine should be given.

Indian hemp might be added to the bromide and chloral mixture, or may be given by itself in the form of a pill.

R. Ext. cannabis indic. gr. vi.

Misce. Fit. pil. xii.

One to be taken every two hours.

The treatment by large doses of digitalis is unsafe, and has been discontinued.

Restraint may be necessary; the best way to apply it is by means of a folded sheet over the chest and arms, secured to the sides of the bed; care must be taken that the breathing is not impeded. The strait-waistcoat may be applied in bad cases, but it is rarely admissible.

Should vomiting be an urgent symptom, ice, effervescing mixture, or the following mixture may be tried :—

R. Sodii bicarb. gr. x.

Acid hydrocyan. dil. ℥ ii.

Tinct. capsici ℥ ii.

Infusion gentian co. ad ʒ i. M.

Sig. To be taken every three hours.

Should pneumonia be present, then the treatment is to be highly supporting, and stimulants are required. The mineral acids and strychnine, with a bitter infusion, lupulin and coca are useful during convalescence.

In chronic alcoholism, all alcohol must be stopped, and quinine, iron, and strychnine are indicated.

AMAUROSIS means blindness without visible change to account for it. In all cases the ophthalmoscope must be used, and the cause of the affection is to be searched for. Tobacco smoking, alcoholism, lead-poisoning and uræmia are causes. In the cases of lead-poisoning, amblyopia or blindness may occur as the only symptom, without the occurrence of a blue line on the gums. I recently saw an artist who was nearly blind from this cause. I found that he used some preparation containing lead. He had no blue line, nor had he even had colic. There was no apparent change in either of the discs. When last I heard of him he was improving under the influence of iodide of potassium.

In hysterical amblyopia it must be remembered, as an aid to diagnosis, that the pupils respond normally to light, both directly and indirectly. The treatment will be that for the disease causing the visual defect. Iron, strychnine, and quinine are useful. In hysterical blindness, faradism will usually cure, together with the usual treatment for hysteria. In toxic amblyopia, galvanism may be tried, the electrodes being applied to the temples; weak currents must be used.

AMYOTROPHIC LATERAL SCLEROSIS, or Antero-Lateral Spinal Sclerosis (Charcot).—This disease is almost invariably fatal in from one to three years, and no method of treatment has proved successful. Suspension may be tried.

ANÆMIA OF THE BRAIN.—The cause of the anæmia must be discovered and removed. Hæmorrhoids must be looked for, and treated if present. Uterine hæmorrhages must be attended to. In acute anæmia the head must be kept low, and the patient must be kept in the recumbent position. Warmth to the head, stimulants, ammonia, and digitalis are useful.

In chronic anæmia, iron, strychnine, phosphorus, cod-liver oil, and Parrish's food are useful. Rest is most important; muscular exercise exhausts the oxygen of the hæmoglobin, and when this substance is deficient absolute physical rest is indicated and is highly beneficial. In fat people with cerebral anæmia and neurasthenia, the rest treatment of Weir Mitchell must be employed. The patients are left in bed, entirely at rest, with excessive feeding made possible through the steady use of massage and electricity.

Arsenic is a very useful drug in cases of cerebral anæmia, combined with iron. Cases of cerebral anæmia, where the patients complain of headache, especially in the upright position, and of giddiness on moving their heads, are frequently met with. The subjects are usually overworked and worried men, and they are pale, but often not markedly anæmic; they often say they can only think well when they are lying down. They complain much of the vertigo which seizes them on the slightest movement of the head. In these cases the following

mixture does good :—

R. Ferri et ammon. cit. gr. x.
Ammonii bromid. gr. v.
Liq. strychninæ ℥ iv.
Infusum quassiaæ ad ʒ i. M.

Sig. To be taken three times a day.

Fresh air, where exercise is not contra-indicated, rest from work and worry, and a generous diet with meat juice and stout, do good. Where the anæmia results from syphilis or lead-poisoning, iodide of potassium must be given in sufficient doses, combined with iron.

ANÆSTHESIA.—The prognosis and treatment will depend upon the origin of the anæsthesia. For hysterical anæsthesia the wire brush and faradic current usually suffice. If there is much tingling with numbness, galvanism is perhaps better. Hypnotic suggestion and metallo-therapy (Burq's treatment) are useful in hysterical and mental cases. Friction and massage do good. Anæsthesia is a most important symptom and is never present in mere neuralgia. It may be due to cerebral, spinal, or peripheral nerve lesion, and its treatment to be successful in these cases must be that for the particular lesion and its cause in each particular case.

ANÆSTHESIA DOLOROSA.—This condition is one of combined anæsthesia with pain. It is an important symptom of compression of the spinal cord, and is most typically met with in

malignant growths of the spine, spinal caries or growths of the bone, membranes or nerve roots, malignant or otherwise. It often occurs in locomotor ataxy. The treatment will of course depend upon the lesion present. Palliative measures only can be adopted for malignant growths of the spine. Other growths must be, if possible, removed. A Sayre's jacket must be applied for caries, and suspension tried for locomotor ataxia. The faradic brush and the following drugs may be employed:—Antipyrin in 10 grain doses, phenacetin gr. v., exalgine gr. $\frac{1}{2}$, repeated when necessary. In severe cases morphine must be administered hypodermically. Suspension is often efficacious for the pains in locomotor ataxia. Syphilis should be looked for, and iodide of potassium with mercury must be tried in full doses.

ANGINA PECTORIS. — The treatment of this affection must be, firstly, for the relief of the paroxysms; and, secondly, to prevent the recurrence of the attacks, and to remove, if possible, the conditions which give rise to them. If the blood pressure is high during the attacks, amyl nitrite usually gives immediate relief, three to five minims being inhaled. Nitro-glycerine, 1 p. c. solution, in one minim doses, will also usually relieve at once; but nitro-glycerine is slower in its action than nitrite of amyl, and is perhaps better adopted for cases where there is continual high arterial blood pressure. The Pharmacopœial tabloids are

very useful, each containing 1/100th grain. All nitrites act in a similar way, but they are not specifics for angina pectoris. Ether, ammonia, and alcohol are indicated, and, in severe cases, a morphine injection, or the patient may be kept under the influence of ether or chloroform. A mustard plaster applied to the precordia often affords relief. If the heart's action is greatly accelerated, atropine and aconite often give great relief. To prevent the attacks, the exciting cause must be removed. Dyspepsia, flatulence, smoking, venereal excess, etc., must be avoided. The patient should constantly wear a belladonna or opium plaster. Any organic disease must, as far as possible, be treated. Arsenic, iron, digitalis, and strophanthus are useful as heart tonics. Iodide of potassium often relieves the angina of aortic regurgitation and the pains of thoracic aneurism. Galvanism has been recommended, but the currents used must be weak. The anode is to be placed on the sternum and the cathode on the lower cervical vertebræ. All cases of angina are serious, even though the patient be young, and there is no evidence of organic disease. The subjects of this affection must be warned against over-exertion, and emotional disturbance. Gouty angina is of common occurrence, and in such cases arsenic usually does good if aided by appropriate dieting.

ANOREXIA NERVOSA.—This condition is met with in people of either sex, but especially in

young hysterical women. The victims of this complaint have an intense aversion to food, and usually waste to mere skeletons. Vomiting and diarrhœa are often present, together with amenorrhœa, and great restlessness. These patients can be cured by the Weir Mitchell process. They must be separated from their friends, and placed under the care of a trustworthy nurse. Milk may be given in small quantities, frequently repeated at first, till the vomiting ceases, and then in larger quantities till several pints are given a day. Later on other articles of food may be added to the dietary. Rest in bed may be necessary in bad cases, and massage and warmth are very useful. The essential point in the treatment is isolation and separation from relatives and friends. A feeding tube must be used if necessary.

ANOSMIA: Olfactory Anæsthesia.—In this condition there is a diminution or loss of the sense of smell. A careful search must be made for the cause of the condition, and the nasal cavities must be explored for polypi. It is common in cases of syphilitic or strumous ozena, and the ozena must be attended to. It may result from organic disease of the olfactory lobe, or of the fifth nerve, or from disease of the temporo-sphenoidal lobe of the brain. It occurs also in cases of hysterical hemi-anæsthesia, and it may result from exposure to bad smells. In some cases it is congenital. Anosmia may occur in the course of locomotor

ataxia. The treatment will depend upon the cause, and it is generally unsatisfactory. The nasal mucous membrane must receive careful attention, and any polypi present must be removed. In hysterical cases galvanism may be tried. The anode should be placed behind the mastoid process, and the cathode to the nasal bones, but only a weak current should be employed. Althaus has recommended the insufflation of strychnine, gr. $\frac{1}{24}$ th, mixed with sugar. Iodide of potassium must be given freely in syphilitic cases, and cod-liver oil with the syrup of the iodide of iron in struma.

APHASIA.—The prognosis and general treatment of aphasia, will depend upon the nature of the lesion giving rise to it. Aphasia may occur without paralysis, after overwork, or excitement, and in such cases absolute rest is necessary, and great care must be exercised in the future mode of living.

In all recent cases of aphasia, a careful enquiry as to any previous syphilitic infection must be made, and, if such be obtained, and it is at all likely that the aphasia results either from thrombosis in a vessel diseased from syphilis, or from the presence of gummatous mischief in or near the various speech centres, then iodide of potassium must be given with mercury, the former in large doses, and pushed according to its effects upon the patient. Mercurial inunction is very efficacious in such

cases, a drachm of blue ointment being rubbed in daily. If the aphasia be due to embolism, the prognosis is unfavourable; the same treatment applies as is indicated in embolic hemiplegia, and in thrombosis, namely, to favour in every possible way the collateral circulation, and in no way to depress the heart's action; stimulants and digitalis being used. The reverse treatment applies in cases of cerebral hæmorrhage; here we aim at diminishing the blood pressure, and do not give stimulants.

I have, once or twice, seen recovery from attacks of word-deafness in old people (due to thrombosis in an atheromatous artery) follow on the administration of moderate doses of iodide of potassium. The special treatment of aphasia consists in a process of re-education. In motor aphasia, as far as writing is concerned, the left hand must be educated to write, by the use of copy-books, as the right was educated in early life; and, as far as articulation is concerned, the patient must be taught again to articulate by imitating the movements of the lips of the teacher.

In word-deafness the patient may acquire the power of reading by the help of tactile and muscular sensations. Raised letters may be used. Westphal records a case of word-blindness, in which the patient regained the power of reading his own writing, by passing his finger over each letter as if he were rewriting them. In word-

deafness, systematic education is of great use ; such patients are usually quick at interpreting gesture-language and writing. In the combined forms of aphasia the treatment is far more difficult, and requires great judgment and patience.

APHONIA.—Paralysis of the adductor muscles of the larynx may occur after diphtheria, from exposure to cold, from chronic lead or arsenical poisoning. It is common in hysteria, and in this affection the arytoënoideus muscle is usually paralysed. Aphonia may result from an aneurism compressing the recurrent laryngeal nerve, or from bulbar disease. The treatment for aphonia, then, must be directed to the primary disease producing it. If it occurs after diphtheria, strychnine does good, and galvanism or faradism is useful. In hysterical aphonia the application of the faradic brush to the skin over the larynx in sufficient strength to cause pain usually suffices, but in severe cases one electrode may be introduced into the larynx by the aid of the laryngoscope ; the other being placed over the larynx externally. Care must be taken not to injure the larynx in any way. In obstinate cases a circular blister may be applied round the throat, and sparks from a static machine may succeed in effecting a cure. Hysterical aphonia is apt to relapse, and the general state of health must be attended to. Iron salts, with a small dose of bromide of potassium, and asa-fœtida, often check recurrence and restore the

patient to health. If necessary, the patient must be isolated. Change of air and the seaside may be necessary to set the patient up.

APOPLECTIFORM ATTACKS often occur in the course of chronic degenerative diseases of the nervous system, being especially met with in general paralysis of the insane, multiple sclerosis, and locomotor ataxy. The patient is found unconscious, with an elevated temperature, and perhaps with hemiplegia or convulsion on one side of the body. Consciousness may be recovered in a few hours, but the condition may prove fatal. I have found that a mustard plaster applied to the nape of the neck, and the administration of a couple of drops of croton oil, or five grains of calomel, usually suffice to restore consciousness in about an hour or two.

APOPLEXY.—In apoplexy from cerebral hæmorrhage, treatment must be:—Firstly, preventive, to ward off an attack; secondly, for the attack; and thirdly, for the restoration of power in the paralysed limbs. In people who suffer from granular kidney, gout, or senile changes in the heart and arteries, a quiet and tranquil life is necessary. Severe physical and mental efforts must be avoided. The bowels must be kept open daily, and the patient should be warned against straining during defecation. No hurrying for trains should be allowed, excitement and worry must be avoided. Sexual intercourse is dangerous,

especially if combined with an indulgence in alcohol. A light diet is advisable, with great moderation in the use of stimulants, and heavy meals and late suppers should be avoided. Apoplexy most frequently comes on in the night, and has frequently followed a heavy supper. The recumbent position favours cerebral hæmorrhage by interfering with the return of venous blood, and a heavy supper, with much drink, would, by filling the blood vessels and raising the blood pressure, greatly favour rupture of a diseased vessel. A light farinaceous diet is the safest, with meat once a day only, and that at a mid-day dinner. Old people should avoid exposure to the cold, and must not indulge in a cold bath. Apoplexy is more common in the winter than in the summer. At the workhouse infirmary, on a very cold day in winter, especially if there has been a sudden frost, I am pretty sure to see two or three cases of cerebral hæmorrhage or of melæna taking the place of apoplexy. No one over fifty years of age should take a cold bath ; the water should always be slightly warm. Elderly people, who habitually use the cold bath in the morning, frequently complain of headache. Exposure of the surface of the body to cold drives the blood to the brain and interior of the body, and causes a dangerous increase of pressure in the cerebral arteries. Old people are sometimes liable to attacks of cerebral congestion, complaining of fulness in the head,

with throbbing, giddiness, and headache. In these attacks the bromides are very useful, combined with ergot. Leeches to the scalp and a smart purge are highly efficacious. Such attacks often precede, and are premonitory of, apoplexy. Warm clothing is needed, and the limbs should be well covered, and old people should wear night-socks, and have their beds warmed. They should have high pillows, and wear nothing tight round the neck.

The Treatment during an Attack.—The patient must be put to bed in a darkened room, and kept absolutely at rest. He must not talk or move, and must use the bed-pan. The head and shoulders should be raised, and the clothes around the neck loosened. Free purgation is necessary, unless the pulse be very feeble. Croton oil (℥ 2) or calomel (gr. v.) may be placed on the back of the tongue, and an ice-bag should be applied to the head. Venesection used to be regarded as the great remedy for the apoplectic condition, but it must not be performed unless the pulse is hard and the heart powerful, and then only a small quantity of blood must be drawn.

A mustard plaster may be applied to the nape of the neck; this probably acts by reflexly constricting the cerebral vessels. Warm fomentations and hot bottles may be applied with advantage to the extremities, but care must be taken that the patient is not burned. If convulsions or vomiting

occur they must be checked, as they tend to increase the hæmorrhage. A chloral and bromide enema will probably succeed in doing this. In cases where the pulse is bounding and the heart excited, aconite is indicated. The patient should be on a water-bed, and care taken to prevent bed-sores, which should be watched for. The bladder should be examined daily, and the urine must be drawn off should there be any retention.

If the patient survives the shock of the hæmorrhage, the less he is interfered with the better, for a week at least. If fever appears, an ice-bag should be applied to the head, and the bromides should be prescribed internally. Electricity should not be used for a month after the attack, but then it may be used in the form of faradism to the palsied muscles. Massage and exercise of the muscles with nervine tonics, such as strychnine, iron salts, phosphorus and phosphide of zinc (in $\frac{1}{4}$ grain doses) do good. The patient should be encouraged to try constantly to move the affected limbs, voluntary impulses being good stimulants to diseased nerves, and hastening the restoration of their functions.

Great care must be exercised in the treatment of the apoplectic state, and it must be remembered that coma may occur in cerebral thrombosis, in which condition the treatment is the exact opposite of that for cerebral hæmorrhage.

Victor Horsley has suggested ligaturing of the carotid artery in cases of cerebral hæmorrhage.

Certainly, if called to a case early enough, one ought to apply compression to the common carotid artery.

ARTHRITIC MUSCULAR ATROPHY.—Inflammation of a joint is invariably attended with wasting of the muscles that move the joint; the extensor muscles being the chief sufferers. The more acute the joint mischief, the more rapid and severe is the wasting. The wasting occurs after inflammation from any cause. The proper treatment is to cure the joint mischief; little can be done for the muscles till the former is cured. The wasting often lasts for months after the joint has quite recovered. In these cases massage and electricity are very useful, and hasten the recovery of the muscles. The reflexes are always exaggerated, and there may even be a patellar in a foot clonus. This must be borne in mind, or a diagnosis of cord disease might be made.

ASPHYXIA, LOCAL, OR RAYNAUD'S DISEASE.—In this affection, it is important for the patient to avoid exposure to cold. Warm clothing, a generous diet, and cod-liver oil are beneficial. Dr. Barlow recommends galvanism to the affected extremities.

ASTHENOPIA may be accommodative, muscular (the internal recti being at fault), or retinal (neurasthenic). In all cases errors of refraction must be attended to, and any anæmia or other cause of ill-health corrected. In neurasthenia,

iron and strychnine, combined with the bromides, give relief. Any faulty habit in the way of excessive use of the eyes must be corrected, and shaded lamps used.

ATAXIC PARAPLEGIA, or combined Lateral and Posterior Sclerosis.—The treatment for this affection is the same as that for locomotor ataxia. Dr. Gowers states that he has seen improvement follow a long course of Turkish baths, with thorough rubbing. Attention must be paid to the bladder, and if necessary a catheter must be used daily. Suspension may be tried ; it will not cure the disease, but may improve the ataxy and bladder weakness.

ATHETOSIS (*ἄθετος*, without fixed position).—This rare condition is usually preceded by hemiplegia due to softening, but it may occur independently. The prognosis is bad. Arsenic and the bromides are useful. Massage and galvanism should be tried.

AUDITORY VERTIGO, or Menière's disease.—The attacks of vertigo in this affection are always sudden and of an apoplectiform character. The bromides are very useful, twenty grains of bromide of potassium or ammonium may be given twice or three times a day. Charcot recommends quinine in large doses, ten grains or more, three or four times a day, to produce cinchonism. Under this treatment the affection is at first rendered worse, but after a time gradually diminishes in

intensity, and may disappear entirely. The quinine may be given for a week and then discontinued for the same period, to be again resumed. Quinine in two or three grain doses, combined with hydrobromic acid, or the bromides, often does good. Tincture of gelsemium may be of service. The subjects of Menière's disease are often gouty, and in such cases the alkalies, colchicum, bromide of lithium, and iodide of potassium may relieve or even cure. If there is a syphilitic history, iodide of potassium, combined with mercury, should be tried. Purgatives are to be prescribed if there is any constipation, and any stomach disorder must be at once corrected. Dr. Buzzard recommends salicylate of soda. Strychnine and arsenic may be tried, and occasionally they do good, especially the former. Counter-irritation by the cautery or a blister may be applied to the mastoid process. Digitalis and belladonna have been recommended, as has also the compressed air bath. In all cases, the middle and external ears should be explored by an aural specialist.

ATROPHY OF THE BRAIN may be congenital or acquired. It is common in old age. No treatment is of avail, but in childhood some improvement may result from careful training and education.

ATROPHY OF THE FACE, Hemiatrophia Facialis.—This is an incurable condition. Galvanism has been tried, it is said, with benefit. In cases

that result from injury to the fifth nerve, or from disease of the nerve, it is possible that benefit might ensue from appropriate treatment applied to the nerve, possibly by stretching. As facial hemiatrophy often follows childbirth, it is possible that careful attention to the diet of lying-in women might prevent the occurrence of such a condition. Galvanism and nervine tonics, such as arsenic, iron, strychnine, and quinine, given in any early stage of the disease might possibly check it.

BASEDOW'S DISEASE, GRAVES' DISEASE, OR EXOPHTHALMIC GOITRE.—The treatment of this remarkable disease is often unsatisfactory. Galvanism has been more successful than any other method. One electrode may be placed at the anterior border of the sternomastoid muscles, and the other over the lower cervical spines; the electrodes may also be placed behind the angles of the lower jaw. Or, the anode being placed behind the jaw, the cathode is placed over the thyroid body, or on the epigastrium. The sittings should last from five to ten minutes, and no shocks should be given. It is of primary importance that the subjects of this disease should lead quiet and tranquil lives, rest of mind and body being absolutely necessary. Residence in the country or at the seaside is beneficial. Cases have been benefited by a residence in a mountainous district. Belladonna is the most useful drug; it must be pushed to extreme tolerance. If there is

anæmia, iron and arsenic should be given in addition. Ergot is also useful in this disease. Digitalis in combination with iron often does good. Any source of irritation must be removed, and any uterine or ovarian mischief must be treated. A milk diet and absolute rest in bed are necessary in bad cases. Cold compresses to the neck are useful.

BASILAR MENINGITIS (see MENINGITIS).

BELL'S PARALYSIS, PERIPHERAL FACIAL PARALYSIS.—The treatment of this condition must be directed to the removal of any morbid process damaging the nerve. If syphilitic, iodide of potassium and mercury must be given. If due to otorrhœa, a free exit for the discharges must be ensured. The most common cause is exposure to cold, and, when due to this cause, in an early stage, hot fomentations, purgatives, leeches, and alkalies are indicated. Salicylate of sodium sometimes does good, but the most useful drug, in an early stage, is iodide of potassium, which may be given in 10 grain doses three times a day. A blister behind the ear is sometimes very useful for the relief of pain. The patient must be kept indoors in the early stage, and be placed on a light diet, without alcohol. It is important to protect the eye if any sign of conjunctivitis appear, which must then be covered with a pad. The iodide may be continued for two or three weeks, and then may be combined with iron, arsenic, quinine, or strychnine.

nine. Fresh air and exercise, and freedom from worry and fatigue, must be ensured. At the end of a month galvanism or faradism may be commenced. Electricity is exceedingly useful in the prognosis of these cases, and also in the treatment; by inducing contraction of the muscles, their nutrition is maintained and the atrophy of disuse is prevented. If the faradic contractility is lost on the paralysed side, then the case is a severe one, and the paralysis will be of some months' duration; if the faradic irritability is maintained, then recovery will take place in a few weeks. The reaction of regeneration is usually present in these cases, and by its severity the duration of paralysis, and the probability of recovery, can be estimated. The interrupted current can be used if the muscles respond to it; if not, the continuous or galvanic current must be used. In applying galvanism, the cathode may be placed deeply behind the angle of the jaw, and the anode on the neck; or one electrode may be placed behind the jaw, and the other used to stroke the various muscles. It matters little which electrode is applied to the muscles. The sittings should last about ten minutes, and daily application should be made. The currents should not cause pain, but should just be strong enough to cause the muscles to contract. The patient should be told to practise voluntary movements on the affected side as often as possible, and that side should be protected from cold. Massage is useful. Detmold

has recommended mechanical treatment. A piece of tin wire is bent at both ends, one end is passed over the ear, and the other hooked in the angle of the mouth so that the muscles of the paralysed side shall be supported. The instrument may be worn day and night. (Hamilton.)

BIRTH PALSY.—This paralysis usually results from injury to the cerebral motor centres at the time of birth, either by the compression of the head during birth, or, rarely, by pressure of the forceps. Asphyxia neonatorum is probably a frequent cause, by leading to meningeal hæmorrhage. Three varieties may be met with. Spastic hemiplegia, bilateral spastic hemiplegia, and spastic paraplegia. The latter variety is the most favourable, and recovery often ensues to an extent which allows of walking. In this variety also, there is less mental defect and less danger of epilepsy. Massage applied daily for many months is of great service, and faradisation to the paralysed muscles is also valuable. When there is great rigidity, forcible flexion and extension of the limbs does good, and, when necessary, tenotomy should be performed. The child may often be enabled to walk by appropriate instruments. Epilepsy, which is often present, must be controlled by the bromides, and, if it is of the Jacksonian type, the question of operation may be entertained, though the prognosis in these cases is not good, the lesion being widespread and irremovable. It is important that the

child should be trained and educated, for excellent results have followed even when the child seemed hopelessly imbecile.

BLADDER, DISORDERS OF.—It is of the greatest importance to attend to the bladder in all cases of spinal cord and brain disease. If cystitis be present, the bladder must be washed out daily with a weak solution of permanganate of potassium or with boracic acid. Benzoate of sodium, saccharin, and naphthalin are useful drugs for keeping the urine acid and sweet. If there be retention, and the bladder is not completely emptied at each act of micturition, the catheter must be used daily, and in all cases care must be taken that the catheters are clean. If there be sphincter weakness, tincture of cantharides, in one minim doses, or strychnine, may relieve. Suspension in chronic cord diseases often relieves weakness of the sphincter vesicæ, but it is not so useful in cases of detrusor paralysis. In cases where the bladder is paralysed, the catheter must of course be used; and should the urine become alkaline, the bladder must be washed out. Faradisation may be tried, one electrode being applied to the hypogastrium, the other to the perineum. In all cases of bladder trouble in young adult men, the knee-jerk should be tested, since retention of urine and diminished expulsive power are frequently early symptoms of locomotor ataxia. Vesical crises may occur in this disease attended with tenesmus and pain.

The hypodermic injection of morphine is the most efficacious remedy for these distressing attacks.

BLANCHING OF FINGERS (see RAYNAUD'S DISEASE).—Electricity is the best mode of treatment. The wire brush or galvanism may be used. Friction and massage are useful, and the general health must be attended to.

BLEPHAROSPASM. NICTITATION.—This affection may consist of tonic or clonic spasm of the orbicularis muscle on one or both sides. The tonic form results usually from some irritation about the eye, and is accompanied with photophobia. The clonic variety may be associated with hysteria or the habit chorea of children. It may exist, however, independently of these conditions, being produced by worry and anxiety in neurotic individuals. Women suffer more than men. The condition, like facial spasm, is often very persistent and intractable. Nervine tonics are useful, arsenic, which must be pushed in progressively increasing doses, being the best. Sulphate of zinc may also be given in gradually increasing doses up to even as much as 20 grains three times a day; in this way a case of mine was cured. Any anæmia present must be corrected, and any cause of irritation must be removed, and the patient must have rest and freedom from worry, or drugs will probably be useless. Galvanism is of great service. In children errors of refraction must be corrected by appropriate glasses.

BRAIN, TUMOURS OF.—Medicinal treatment is of little use except in cases of syphilitic, and possibly tubercular, growths. In all cases antisyphilitic treatment should be fairly tried. Iodide of potassium must be given in ten grain doses three or four times a day in plenty of water, and on an empty stomach. The iodide must be quickly increased to thirty or more grains for a dose, and it is wise to try the inunction of mercurial ointment simultaneously, or mercury may be given internally. If after a month no benefit is received from this treatment, then it is extremely probable that the growth is not gummatous. A recovery frequently results in cases of syphilitic growths from this treatment, but not always; a gumma may leave a scar which is a constant cause of convulsions, and which is not amenable to treatment by iodide of potassium and mercury. Tubercular tumours may possibly become quiescent and cretify. I saw a little boy a few years ago with distinct indications of a cerebellar growth, in all probability of tubercular nature. This boy recovered after a long residence at the sea-side. Cod-liver oil and syrup of iodide of iron were given. In all cases of tumour of the brain we can relieve the symptoms by rendering the brain as anæmic as possible. Purgatives must be used to keep the bowels freely open. Stimulants should be avoided, and the patient kept on a somewhat low diet. For the headache an ice cap or Leiter's

coil, with cold water, often give great relief. Antipyrin, phenacetin, and exalgine may be tried. In very severe cases a morphine injection may be necessary. Belladonna and Indian hemp are also useful. The patient should be kept quiet and should do no brain work. Leeches and counter-irritation to the head are often of great service. Convulsions may be checked by bromide of potassium combined with chloral. A blister over the situation of the growth is also useful for this purpose. The head should be shaved. Death is the usual consequence of all tumours of the brain, except those of a syphilitic nature, unless operated upon ; and in all cases there is danger of sudden death, possibly from cardiac inhibition or from convulsions. Thanks to the splendid discoveries of Ferrier, surgeons have been enabled to operate and remove tumours from the brain with complete success. The percentage of cases of cerebral tumour that are amenable to surgical treatment is very small, probably not more than 6 or 7 per cent., and of these the percentage of successful operations is small. Still the results obtained by Victor Horsley, MacEwen, and others amply justify surgical treatment in the face of the fact that all such cases, except those of a syphilitic nature, cannot be cured by medical treatment, and are all ultimately fatal. If, then, in any case, after a fair trial of iodide of potassium and mercury and other palliative measures, say for a month, no benefit is

derived, the advisability of an operation must be entertained. It is of course essential that the tumour should be accurately localised. *Tumours of the motor area; of the occipital lobe, causing hemianopsia with, or without, a sensory Jacksonian epilepsy, attacks in which flashes of light are seen, followed by hemianopsia; of the superior temporo-sphenoidal convolution on the left side, in which case there may be word-deafness; of the third or second frontal convolution of the left side, in which case there is motor aphasia; or of the temporo-sphenoidal lobe, when smell or taste may be paroxysmally disturbed,* are those which may be successfully reached and removed by the surgeon. Even the cerebellum may be reached, and tumours situated in one or other lateral lobe may be removed. In one case of mine a tubercular nodule was easily shelled out from the cerebellar hemisphere. The child died from collapse, but I feel sure that had the operation been performed two months earlier, when the growth was first localised, the child would most probably have recovered. It is most important that operative treatment should not be deferred too long. If after a month's fair trial of medicines no benefit is derived, and the growth can be accurately localised, then the operation should be performed without delay. Unfortunately in some cases, though the diagnosis of growth is certain, yet localising symptoms do not present themselves till the

tumour is of large size and reaches the surface. It is not yet settled how far it is justifiable to attempt to remove tumours of the centrum ovale, but in such cases an explorative operation might be performed, for even if the tumour is irremovable, the relief of tension may give great relief to the patient. All cases of Jacksonian epilepsy—whether motor or sensory—must be carefully watched and kept under observation.

BRIGHT'S DISEASE.—Charcot found kidney disease in one-third of his cases of cerebral hæmorrhage. It is, of course, of the highest importance that the subjects of chronic Bright's disease should be properly dieted, and that the blood pressure should be diminished as far as possible. Purgatives and nitro-glycerine are useful for this purpose. Alcohol and meat should be given sparingly, if at all.

BROMISM.—The bromides of potassium, sodium, ammonium, lithium and calcium, also those of zinc and camphor, are used very largely in the treatment of nervous affections. They are not only powerful for good, but they also, in too large doses, do much harm, and may even cause insanity and death. In too large doses, or even with moderate doses in susceptible subjects, muscular weakness and ataxia, loss of memory and difficulty in articulation, gastric-catarrh, impotence, cardiac weakness, delirium, dementia, insanity, and, finally, coma and death, may occur from excessive and

prolonged treatment by the bromides. They should be prescribed with great care in cases of neurasthenia, and, in fact, in all cases, and patients taking them should be kept under observation. Strychnine, iron and quinine with digitalis are useful to combat bromism after the discontinuance of the bromides. It is generally agreed that the bromide treatment of epilepsy is the most successful; large doses are prescribed, and the treatment is continued for months or years. A minority of the cases, however, are rendered worse by bromide treatment. A young gentleman at the time he was brought to me was having seventeen fits a month regularly. I pushed the bromides till he was taking sixty grains a day, the largest dose being administered at night. He became debilitated and depressed; his memory failed, and he was salivated. His condition became gradually worse, and the fits remained at seventeen per month for six months. I then discontinued the bromide treatment as useless, and even harmful, and gave him ergot and borax—fifteen minims of the liquid extract of ergot and fifteen grains of borax—three times a day. The fits at once dropped to one a month, his general health immediately improved, and after being incapacitated for two years, he was able to commence to earn his living. The dose of bromide of lithium is from five to fifteen grains, of bromide of zinc three to ten grains, of monobromide of camphor two to ten grains.

The mixed bromides seem to act better than one salt by itself. The larger dose should be given at night, and it is best to administer the drugs on an empty stomach. The order of potency seems to be bromide of potassium, of ammonium, of sodium.

BRONCHIAL CRISES occur but very rarely in locomotor ataxia. They consist in paroxysms of rough cough not relieved by ordinary cough mixtures, and unattended with physical signs in the lungs. Sometimes they resemble paroxysms of whooping cough. In severe cases, the only remedy that relieves is the hypodermic injection of morphine.

BULBAR PARALYSIS — Labio-Glosso—Laryngeal Paralysis.—Three varieties of bulbar paralysis are met with.

(1) Sudden or apoplectiform, which occurs usually in subjects with atheromatous arteries, and which is most probably due to thrombosis and consequent softening.

(2) Acute Bulbar Paralysis. This is inflammatory and corresponds with poliomyelitis anterior acuta, and demands a similar treatment ; and

(3) Chronic Bulbar Paralysis, the common form. This variety is slowly progressive and ultimately proves fatal in from one to five years. No method of treatment has succeeded. Nervine tonics should be tried, such as arsenic, quinine,

strychnine, iron, cod-liver oil, or phosphorus. The last three remedies have been strongly recommended. Galvanism may be tried, the electrode being placed on the mastoid processes, or the affected muscles may be galvanised or faradised. It is of the greatest importance to attend to the feeding of the patient. The food should be pulpy, and if there is great difficulty in deglutition, attended with coughing, a tube should be used. The mouth should be washed out after every meal, and any particles that lodge at the roof of, or under the tongue, and between the cheeks and the jaw must be removed.

BULIMIA.—A feeling of hunger of abnormal intensity and periodicity. The appetite is appeased only for a short time, even by a very large meal. It is frequently of central origin, and is met with in hysteria, epilepsy, insanity, diabetes, and frequently in children suffering from worms. The treatment must be that of the primary condition producing the bulimia. Bismuth and creasote are useful in the variety in which there seems to be an abnormal irritability in the afferent fibres of the vagus in the stomach.

CARDIAC CRISES.—Paroxysms of angina may occur in locomotor ataxia, and death may occur from syncope or asystole. A mustard plaster to the precordial region, and a hypodermic injection of morphine, are the best remedies.

CARDIALGIA (see **ANGINA PECTORIS**).

CARIES OF THE SPINE.—The paraplegia and neuralgia resulting from caries of the spine must be treated by prolonged rest on the back in bed. It may be necessary in severe cases, to keep the patient in bed for two or three years. I have seen complete recovery ensue after a three years' rest in bed, in a case in which there was absolute paraplegia with anæsthesia, paralysis of the bladder, and bed-sores. If no improvement takes place with recumbency, suspension may be tried. It is highly recommended by Weir Mitchell. A Sayre's jacket should be applied and should be worn in bed. The most difficult cases to treat are those in which the caries occurs in the cervical, or high up in the dorsal, region. A jury-mast must be used in these cases, and the head must be fixed. Counter-irritation with the actual cautery on each side of the spine, close to the diseased vertebræ, often does good, and it has been much lauded by Charcot. Cod-liver oil and syrup of iodide of iron or Parrish's food must be given internally with a nutritious diet consisting of milk, eggs, digestible puddings, fish and light meats. The sulphide or chloride of calcium, may also be prescribed, but are inferior to cod-liver oil. When the patient is able to get about, a residence in the country or at the sea-side is necessary. As much fresh air as possible must be obtained. In obstinate cases the spine has been trephined, and the thickening of the dura mater removed, with

resulting cure of the paraplegia. MacEwen introduced this operation, which he has performed with complete success in several cases. The cause of the compression is a localised external pachymeningitis, and as it is entirely outside the dura, these cases are very favourable for operation.

CARPO-PEDAL CONTRACTIONS.—

These are of common occurrence in rickety children, and are often associated with laryngismus stridulus. They are indicative of the presence of the convulsive state. Chloral and the bromides must be prescribed, but cod-liver oil and iron salts must be given as well, the former preventing the immediate onset of convulsions and diminishing spasm, the latter restoring tone to the nervous system, and correcting the conditions causing rickets. In all cases, appropriate dieting is necessary, meat juice and fats being essential. Fresh air and proper hygiene are of great importance. Carmo-pedal contractions are prominent features of attacks of tetany.

CATALEPSY.—This rare condition usually supervenes from emotional disturbance in neurasthenic subjects. It may occur in mental disorders, especially in melancholia and in hysteria. I recently saw a case in which this condition followed an attack of influenza. Treatment must be directed (1) to the arrest of the attacks; (2) to the prevention of their recurrence. (1). The patient may be unconscious, and an attempt must

be made to restore consciousness, by faradism, the application, with care, of ammonia to the nostrils, or snuff. An emetic is sometimes efficacious, such as apomorphine, gr. 1/20th—1/12th hypodermically. The cold douche may be used. (2). In the intervals of the attacks the patient's general health must be attended to. Nervine tonics and antispasmodics are indicated. Any anæmia must be treated, and any irregularity of the bowels or viscera must be corrected. All causes of worry and exhaustion must be removed. Seclusion from friends is usually necessary. In some cases catalepsy has seemed to depend upon malaria ; in these cases quinine, arsenic, and strychnine combined are of service.

CAUSALGIA.—This term has been applied by Weir Mitchell to cases in which severe burning pain occurs in the extremities, often in one digit. Glossy skin is often present, and the condition probably depends upon some change in the peripheral sensory nerves. The application of solid menthol often relieves. Galvanism is indicated. Arsenic, quinine, and gelsemium are useful drugs. In severe cases, counter-irritation, with blisters along the course of the nerve, may do good, and it may be necessary to stretch the nerve supplying the painful part. Weir Mitchell recommends repeated vesication in the treatment of causalgia.

CEPHALALGIA, OR HEADACHE.—Headache is a symptom, not a disease, and no symptom accompanies more varied morbid conditions

than it. It may be—(1) Anæmic. (2) Hyperæmic. (3) Hysterical. (4) Gouty. (5) Neurasthenic. (6) Pyrexial. (7) Rheumatic. (8) Syphilitic. (9) Toxic. (10) Periodical. (11) Dyspeptic. (12) Dependent upon organic brain disease. THE ANÆMIC headache is usually soon cured by iron salts combined with a small dose of bromide of potassium or ammonium and purgatives. THE HYPERÆMIC headache by ergot, bromides, and purgatives; constipation is a common cause of headache. THE HYSTERICAL headache (Clavus) is relieved by bromides and antispasmodics, such as asafoetida, valerian, and musk. THE GOUTY headache is often very severe; the ice cap, purgatives, and alkalies, with milk diet, usually suffice. THE NEURASTHENIC headache is cured by rest, freedom from worry, and often removed for a time by a combination of bromide of ammonium with antipyrin, ten grains of each for a dose. THE PYREXIAL headache is often very severe; it is especially common in typhus and typhoid fevers, and it may be so severe as to lead to a suspicion of meningitis. It ceases as soon as delirium supervenes. Butyl-chloral hydrate and the bromides, Indian hemp, and antipyrin are all useful, but the ice bag applied to the head seems to be most efficacious. THE RHEUMATIC headache is to be treated with iodide of potassium and salicylate of sodium and warmth. THE SYPHILITIC headache is usually nocturnal, but

not always; it is as a rule at once relieved or cured by large doses of iodide of potassium. THE TOXIC headache occurs from tobacco smoking, alcoholism, lead-poisoning, from exposure to the atmosphere of overcrowded and heated rooms, and from uræmia. Lead-poisoning may cause optic neuritis, frontal headache, and even squint, and may, unless care be taken, be mistaken for cerebral tumour. Iodide of potassium and sulphate of magnesia, followed by iron, are the remedies. THE ALCOHOLIC headache may be very intense and persistent, and is then probably due to meningitis. Counter-irritation to the scalp, an ice bag, the bromides, with Indian hemp and antipyrin, often relieve. The patient, of course, must entirely abstain from alcohol. THE DYSPEPTIC headache must be treated by proper dieting, and the usual remedies for gastric catarrh. A dose of blue pill and euonymin often at once relieve a BILIOUS headache. Seidlitz powder and sulphate of soda are very useful.

In all cases of headache, the urine must be examined for albumen, the fundus oculi must be explored, and the ocular refraction tested. Headache is very common in uræmia, acute and chronic. It is then very persistent and intense, and often occipital. Purgatives and venesection are often useful, and if there is high tension the one per cent. solution of nitro-glycerine in one minim doses may be prescribed, and is usually beneficial.

Hypermetropia and astigmatism are common causes of frontal headache in school children ; the headache is cured by appropriate glasses. Anæmia and neurasthenia are often present in these cases, and require iron, strychnine, and small doses of bromide of potassium in addition to glasses. The headache dependent upon organic brain disease is usually persistent and severe, and often prevents sleep. The treatment will depend upon the nature of the disease present. Purgatives relieve the headache of cerebral tumours, and constipation always aggravates it. Counter-irritation of the scalp, of the forehead, or occiput, with iodine or blistering fluid, is often useful. Bromide of potassium or ammonium, with or without antipyrin, is beneficial.

A mustard leaf to the nape of the neck is a well-known and useful remedy for headache. In all obstinate cases of headache iodide of potassium should be tried.

CEPHALIC TETANUS. — This is a rare variety of traumatic tetanus in which the face is paralysed on the side of the injury, which is usually on the face or forehead, or somewhere in the area supplied by the fifth nerve. The affection is very fatal, and the treatment is that for tetanus. Chloral and the bromides seem to be of the most use, but it is most essential to attend to the proper feeding of the patient.

CEREBRAL HÆMORRHAGE (see APOPLEXY).

CEREBRAL HYPERÆMIA—CONGESTION OF THE BRAIN.—Two forms may be distinguished: (1) The active cerebral-fluxion, and (2) the passive. In the active form the heart's action must be lessened; cold application must be applied to the head, and the feet may be placed in warm water. Leeches to the temples or over the mastoid process are useful. Purgatives are of great value; the senna mixture of the Pharmacopœia acts well. A mercurial purge followed by a saline cathartic is very efficacious. The bromides with ergot may be given internally, together with strychnine, or ergotin may be administered hypodermically. A mustard plaster over the stomach and liver may do good. The patient should be kept absolutely at rest, with the head and upper part of the body raised. The diet must consist of small quantities of milk, and no stimulants must be given. The clothing must be quite loose around the neck, and no talking should be allowed. Cerebral congestion is very dangerous in old people on account of the increasing brittleness of the arteries with age. When once an attack has occurred, the patient must afterwards attend to the bowels carefully and avoid constipation; straining at stool is dangerous. Tobacco, tea, coffee, and stimulants, together with all causes of excitement, worry, intellectual effort, public meetings, heavy meals, heated rooms, and sexual excess must be avoided. In cases where congestion supervenes upon

cessation of menstruation or suppression of the hæmorrhage from hæmorrhoids, the return of the hæmorrhage must be favoured by leeches to the arms or thighs, warm baths, and other measures. Passive congestion occurs when the return of venous blood from the brain is impeded, and is met with in heart and lung diseases. In this variety we must strengthen the heart's action by digitalis, ether, alcohol, or ammonia. Venesection is of great use; by lowering the pressure in the veins it enables the arteries to empty themselves. Purgatives and diuretics are also useful. Strychnine is very useful for restoring tone to the cerebral arteries.

CEREBRAL SINUSES, THROMBOSIS OF.—This condition is apt to supervene in cases of exhaustion, chlorosis, and in connection with ear disease. The patient must be placed on the back in bed, with the head and upper part of body slightly raised to favour the return of blood. The heart's action must be stimulated by digitalis and ammonia, and the exhaustion controlled. Peptonised beef-tea, Valentine's meat juice, and peptonised milk may be given. Small doses of iodide of potassium combined with ammonia may do good. The prognosis in all cases, however, is bad. In septic thrombosis, perchloride of iron and quinine have been recommended.

CEREBRO-SPINAL MENINGITIS (see MENINGITIS).

CEREBRITIS, ENCEPHALITIS.—Acute encephalitis is usually the result of traumatism, ear disease, alcoholism, or exposure to the sun. If an abscess form, surgical treatment is called for. (See **ABSCESS OF THE BRAIN.**) Absolute rest in bed in a darkened room is necessary. The head should be shaved and ice applied. Leeches may be applied behind the ears, and sub-occipital vesication practised. The bowels must be kept open. Antipyrin and the bromides are useful for the relief of headache; chloride of ammonium and Indian hemp are also of service. If there is much fever and vascular excitement, the tincture of aconite may be prescribed with the bromides. If syphilis is suspected, iodide of potassium and mercury must be given in appropriate dosage.

CERVICAL OPISTHOTONOS.—This is a very important symptom of basilar meningitis, and when occurring in infants, should always suggest the presence of syphilitic basilar meningitis. In all cases mercury must be tried with iodide of potassium. Mercurial inunction is highly efficacious. Cervical opisthotonos may result from tumours in the cerebellum, these being usually of a tubercular nature. Cod-liver oil and syrup of iodide of iron may be given, and, if the tumour can be localised, the question of operative interference may be entertained. Care must be taken to exclude rheumatic myalgia of the cervical muscles, which may also produce cervical opisthotonos.

CERVICO - BRACHIAL NEURALGIA.—

This most frequently occurs as a result of exposure to cold or of over-exertion. In all cases a careful examination should be made for a growth irritating the nerves. It may result from lead-poisoning or from malaria. The treatment will depend upon the cause. If any growth exists it must be removed; if there is spinal caries the spine must be fixed. If the pain is very severe, hypodermic injections of morphine must be given; they have not only a palliative, but a curative effect. Quinine, arsenic, and iron are useful; the latter especially, if anæmia is present. Belladonna and chloroform liniments, ung. veratriæ, and counter-irritation are useful. Fly blisters may be applied over the tender spots. Atropine, $1/120$ th to $1/60$ th of a grain, hypodermically, will sometimes succeed when morphine fails, or the two drugs may be combined. Shampooing, the hot or cold water treatment, and fomentations are all useful. In rheumatic cases salicylate of sodium, antipyrin, and iodide of potassium should be administered. If due to syphilis, iodide of potassium must be given in large doses with mercury. Gelsemium should be fully tried in all obstinate cases; gelsemia, the active principle, may be given, the dose being $1/60$ th to $1/30$ th grain. Warm clothing, fresh air, rest, plenty of good food, animal diet, with alcohol in moderation, do good. Cod-liver oil is a useful remedy. Aconite may be tried, or its alkaloid,

aconitia, 1/250th grain. Indian hemp and butyl-chloral hydrate are useful drugs. Osmic acid may be injected into the seat of pain, one or two minims of the one per cent. solution being used. Acupuncture is often useful. Neurectomy must not be performed unless it is certain that the cause is peripheral. Nerve stretching is sometimes necessary. Electricity, either in the form of galvanism, or, when that fails, faradism, may be applied daily with benefit.

CERVICO-OCCIPITAL NEURALGIA.—

The pain is usually chiefly felt in the area of distribution of the great occipital nerve. The disease may be the result of spinal caries, or may follow injury or exposure to cold. The treatment is the same as that for cervico-brachial neuralgia. It is of great importance in all cases of neuralgia to examine carefully for any gross lesion, such as spinal caries, exostosis, tumour, &c.; also to see whether there are any signs of neuritis, such as anæsthesia or glossy skin, before concluding that the case is one of simple neuralgia.

CHARCOT'S JOINT DISEASE. — This occurs in locomotor ataxia, and no treatment is of avail. Amputation has been performed in some cases where the nature of the disease has not been recognised; as a rule the joint lesion is not troublesome to the patient, and it should be left alone. The usual internal remedies for locomotor

ataxia should be given. Charcot's disease is amyotrophic lateral sclerosis.

CHEYNE-STOKES RESPIRATION.—

This remarkable modification of breathing may occur in various diseases, and the treatment must be directed to the primary disease present in each case. It is generally a symptom of fatal omen, and death usually quickly follows. In some cases it may be chronic and may last for months. Recovery, however, has ensued in rare cases. Sometimes, together with the rhythmic breathing, there is rhythmic contraction and dilation of the pupil, with periodic loss of consciousness for a few seconds. Strychnine and atropine, which are stimulants to the respiratory centre, may be given.

CHOREA.—The child must at once be removed from school, and all bodily and mental work must be stopped. In mild cases it is not necessary to keep the child in bed, but muscular fatigue is harmful. In severe cases, rest in bed in a darkened room is essential. The Weir Mitchell treatment is very useful, consisting in isolation, absolute rest, overfeeding, and massage. Electricity is harmful. It is very essential that the patient take plenty of nutritious food; and meat extracts, milk, eggs, and light puddings may be given. If the movements are so severe that feeding by the mouth is impossible, peptonised nutrient enemata must be given. Sleep is also essential, and great benefit often follows prolonged sleep.

Chloral is of great service where the patient cannot sleep on account of the violence of the movements, or is maniacal. It may be combined with the bromides, and given regularly every four hours until the patient sleeps and is tranquil. Inhalation of chloroform is necessary in some cases. Nervine tonics are needed, and of these arsenic is the best. This must be pushed to the limit of tolerance ; should it not agree when given by the mouth, it may be administered hypodermically. Iron is usually combined with arsenic, and must be given in all cases where there is anæmia. Dialysed iron or the lactate are easily borne. If arsenic fails, sulphate of zinc may be given in gradually increasing doses, and even fifteen grains or more can be given at a dose and will be retained. Strychnine is also valuable in cases where arsenic fails. In severe cases, care must be taken that the patient is not jerked out of bed, and does not injure himself. Well-padded side-boards should be used, and, if necessary, the limbs should be wrapped in cotton wool. If there are any rheumatic symptoms, salicylate of sodium must be given with the arsenic. The patient must be kept absolutely quiet, and all sources of mental irritation must be removed. Hyoscyamin, eserine, and conium have been recommended for this disease, but they are dangerous and rarely of use. An ice bag or the ether spray to the spine has done good. Ranney lays great

stress on the occurrence of errors of refraction in choreic children ; he looks upon these as the causes of the affection, and reports cases cured by appropriate glasses. It is doubtful whether such errors of refraction have much influence in causing chorea ; nevertheless, they ought to be corrected. Any source of reflex irritation, such as worms, should be got rid of. The temperature should never be taken in the mouth in chorea ; Gowers mentions a case where the end of the thermometer was bitten off and swallowed. Chorea occurring during pregnancy is very serious ; it is very apt to be attended with mania, and then is often fatal. It must be looked for in first pregnancies, and especially if the woman has suffered from chorea before. The proper treatment is to keep the patient in bed, and to administer arsenic, bromides, and chloral. Where no improvement takes place after appropriate treatment, or the case, in spite of treatment, is rapidly getting worse, labour must be induced. The disease as a rule soon subsides after labour, but not always. Chorea, occurring in men after rheumatism, is often attended with mania, and is very fatal.

Senile chorea and hereditary chorea are usually incurable, but arsenic and other nervine tonics often produce amelioration. Chorea may precede or follow hemiplegia. In such cases the usual treatment may be adopted, but the prognosis is bad. I recently saw a case in which chorea suddenly

appeared on one side of the body, having an exactly hemiplegic distribution. The face, tongue, and hand were chiefly affected, the leg recovering in a day or two. The patient was about fifty years of age, and had heart disease. Mental symptoms in the form of delusions and loss of memory were present. It is probable that the hemi-chorea was due to embolism. The patient died in a few days. Cold sponging and salt baths are very useful in convalescing or mild cases of chorea.

CHRONIC CEREBRITIS. SCLEROSIS OF THE BRAIN. — This may result from syphilis, and in all doubtful cases antisyphilitic treatment should be tried. I have recently seen two typical cases in children, in which no cause could be discovered. The disease is usually unaffected by treatment, and is soon fatal. Cod-liver oil and nervine tonics may be given, such as arsenic, strychnine and phosphide of zinc.

CLAUSTROPHOBIA.—(See AGORAPHOBIA.)

COLD is much employed in the treatment of affections of the nervous system. Cold sponging is very useful to prevent attacks of laryngismus stridulus, and to brace up the system in the neurasthenic state. In hysteria, chorea, and other functional affections, cold sponging or the cold bath are very useful. Care must of course be taken that reaction is good, and that the heart is sound. Cold is dangerous for old people with brittle arteries. The cold water pack is useful in cases of insomnia,

and cold to the head is invaluable in pyrexial delirium, meningitis, and headache.

COLIC.—The treatment of this affection must be directed to the cause. Pain must be at once relieved by morphine injections and hot fomentations. If there is much collapse, atropine may be substituted for morphine, or be combined with it; and ether, ammonia, and carminatives may be given. A purgative should be administered, a full dose of castor oil with ten drops of laudanum being usually very efficacious. Enemata are safe and useful. There is always danger from the intensity of the pain, especially if the heart is unsound. The gums must be examined for the blue line, and enquiry made as to the occupation of the patient. If the patient has a blue line on the gums, or if he works in lead, iodide of potassium must be given with Epsom salts. The bowels must be moved, and as a rule the pain continues until the constipation, always present, is overcome. A patient of mine, a painter, under treatment for lead colic, died suddenly from a paroxysm of pain; the heart was slightly fatty. Possibly an atropine injection might have prevented the reflex cardiac inhibition that took place.

COMA.—The treatment of this condition must be directed to the cause, and it is of the utmost importance that a correct diagnosis be made before the patient is interfered with. Coma may occur from alcoholism, apoplexy or cerebral hæmorrhage,

cerebral congestion and anæmia, opium and other narcotic poisons, uræmia, diabetes ; in rare cases of cerebral embolism and thrombosis, epilepsy and hystero-epilepsy, from exposure to excessive cold or heat, and from syphilis. It must be remembered that the subjects of locomotor ataxia, general paralysis, and multiple sclerosis are liable to attacks of coma. In all cases of coma, the urine must be drawn off and examined for sugar and albumen, and the fundus oculi should be inspected. The pupils must also be examined, and any irregularity or alteration in size noted. The condition of the heart and pulse is of great importance, and a high or low blood pressure is an important indication for treatment. Signs of paralysis must be carefully searched for, and the superficial and deep reflexes carefully examined and compared on the two sides. In old people the probabilities are in favour of cerebral hæmorrhage, but thrombosis may cause coma, and the treatment would be directly opposite in the two cases, so that, unless the diagnosis is pretty certain, the less one interferes the better. It must be remembered that epilepsy occurs at all ages, and is by no means rare in old people. I have had several instances of old people brought into the infirmary in a condition of coma, without any history, who, on recovery, have told me that they were subject to fits. Coma, after epilepsy, is more common in old people than in the young. As a general rule it is proper to give purgatives, unless

the blood pressure is very low and the heart feeble. Calomel and croton oil are the very best and most convenient drugs to administer. A mustard plaster may also be applied to the nape of the neck, and in the apoplectiform attacks of general paralysis, multiple sclerosis and locomotor ataxia, this treatment certainly accelerates the return to consciousness. If the face is turgid and the blood pressure high, venesection to a small extent may be performed, and is very effective in the coma of uræmia and cerebral congestion. In the case of young adults with coma, the possibility of syphilis as a cause must be borne in mind. Althaus and Clifford Allbutt have written upon the little-known subject of syphilitic coma. Last year, while staying at the seaside, I was called to see a young man who was quite suddenly seized with coma. He had not been previously convulsed, but had been travelling a good deal, and had been overworked for some days before his illness. He had no albumen or sugar in his urine, no change in the fundus oculi, and no heart disease. The knee jerks were present and there was no sign of hemiplegia. I found that, though married several years, his wife had never had any children, and not even an abortion. This fact made me think of syphilis as a cause of coma, and, on examining his penis, I found a scar. I accordingly prescribed mercury hypodermically and iodide of potassium in enema, for the patient was quite unable to swallow. Blue ointment was

also rubbed in. To my surprise, on my again going down the following week, I learned that as soon as the gums were touched, he began to recover, could swallow, and followed a light with his eyes. He completely recovered after five days of complete coma. He saw me some weeks later and denied syphilis, but the scar, the childless history, and the result of treatment, leave little doubt in my mind of the syphilitic nature of the coma. In all cases of coma the patient must be carefully fed by the mouth or rectum, and care must be taken to draw off the urine. Purgatives are only contra-indicated in thrombosis and cerebral anæmia.

COMPRESSION MYELITIS.—The treatment will depend upon the condition causing the compression. In all cases of paraplegia the spinal column should be examined. I have seen spinal caries overlooked as a cause of paraplegia from a want of examination. Compression myelitis is characterised by the prominence of irritative phenomena, such as girdle pain and shooting pain in the limbs, which precedes the onset of paraplegia. The more rapid the onset of the paraplegia, the better the prognosis. Motor paralysis is more marked than sensory, as the sensory tract runs mainly in the central grey matter, which is less compressed than the periphery of the cord. If an aneurism is causing the compression, absolute rest, with large doses of iodide of potassium, does good. If a gumma, then antisyphilitic treatment. If a

tumour can be localised, and is of small extent, it may be excised. This has been done with success by MacEwen and Horsley. In the case of spinal caries, suspension, Sayre's jacket, and in very bad cases, trephining of the spine and excision of the growth on the dura mater, may be performed, as recommended by MacEwen. In all cases the bladder must be attended to, and bed sores obviated if possible.

CONCUSSION OF THE BRAIN.—If the stage of collapse is marked, the patient must be wrapped in warm blankets, and hot bottles may be applied to the feet. If the pulse is very bad, stimulants may be given, but must be administered with care. A hypodermic injection of atropine—gr. 1/120—is very useful in cases of shock. The patient must be kept in bed, absolutely quiet, and in a darkened room. Should fever supervene, ice must be applied to the head; the bromides may be prescribed together with purgatives. The patient must be very careful for a long time, and must avoid excitement, mental work, worry, alcohol, and tobacco. Headache is a very important symptom, and as long as it persists the patient should be kept at rest both in mind and body.

CONCUSSION OF THE SPINAL CORD.—The treatment is the same as that for concussion of the brain. Absolute rest in bed is essential. In the stage of collapse, stimulants and warmth are necessary. Serious degenerative disease may

supervene later on, such as locomotor ataxia and lateral sclerosis. Acute myelitis may follow concussion. In all cases the reflexes must be carefully observed, and the bladder attended to. Girdle pain is an important indication of organic disease. Much harm may be done by getting the patient up too soon.

CONTRACTURE, or persistent shortening of the muscles, may be caused in various ways. It may often be prevented by careful attention to paralysed muscles. Massage and faradisation continued persistently for some time will do much to prevent contracture by restoring or improving motility of paralysed muscles. In old cases, and where there is structural rigidity, tenotomy may be necessary. In hysterical contracture, the limbs may be straightened under chloroform, and kept extended by splints or by weights. In the contracture of lateral sclerosis, chronic myelitis, and compression myelitis, extension by weights is useful, the primary disease being appropriately treated. In the contracture of congenital bilateral spastic paraplegia, forcible flexion and extension of the limbs under an anæsthetic is useful.

CONVULSIONS are more common in children than in adults, cerebral inhibition being less active in the former. In infantile convulsions the cause must be ascertained. It is necessary to prescribe sedatives for the arrest of convulsions, and also nervine tonics, such as cod-liver

oil and iron, to prevent their recurrence. A warm bath, with cold applications to the head, may prove useful ; but if it does not succeed at first, it should not be repeated. Chloral is the best drug, and is well borne by children ; it may be given in combination with bromide of ammonium or potassium, and, if necessary, may be administered per rectum. A purgative must be given, and the best is calomel, a couple of grains being placed at the back of the tongue. Rickets is commonly present, and should be treated with cod-liver oil and Parrish's food. Worms must be got rid of ; the round worm being that which is most potent in the production of eclampsia in children. In all cases of repeated convulsions in children, a dose of santonin in castor oil should be administered at bed time, and the stools should be examined. Dentition must be looked after, and if necessary the gums may be lanced, but this proceeding is rarely called for. Laryngismus and carpopedal contractions are strong indications of the convulsive state, and call for chloral and the bromides, together with cod-liver oil and iron. Children who have recently had convulsions should be kept from school, and must have fresh air, good food, and mental rest. Eclampsia in infancy and childhood is very serious ; it may prove fatal, or may result in epilepsy, hemiplegia, or imbecility. In all inexplicable cases the ear should be examined with the speculum ; and if otitis media exist with

suppuration, the membrana tympani must be incised. All exhaustive states are potent causes of infantile eclampsia, and must as far as possible be prevented by suitable alimentation and stimulants. Diarrhœa must be checked. Eclampsia occurring at the commencement of the specific fevers is very fatal; and that produced by cerebral congestion, or by deficient aeration of the blood, is also very dangerous. Puerperal convulsions occur in most cases towards the end of pregnancy, and in albuminuria are usually present to a considerable extent. Venesection is a potent remedy, and may be performed if the pulse is good and there are signs of cerebral engorgement. The inhalation of chloroform and chloral enemata are very useful; the bromides may be combined with chloral. Pilocarpine has cured many cases. As a rule the convulsions result in the speedy onset of labour and the birth of the child, but it may be necessary to induce labour. It is astonishing in some cases to see the rapid recovery after delivery; the urine in many cases loses all albumen.

In all cases of eclampsia the urine should be drawn off and examined, for uræmic convulsions are exceedingly common. Purgatives, pilocarpine, and occasionally venesection are indicated. The vapour or hot air bath is also useful. Convulsions are apt to occur in cases of alcoholism. I recently saw a gentleman who was under treatment for alcoholic paralysis, and who was suddenly attacked

with convulsions. The temperature rose to 103°F. , and he was really in a condition of status epilepticus. Nothing could be kept on the stomach, and the collapse after each fit was alarming. One drachm of chloral with two drachms of bromide of potassium was injected into the rectum every three hours. The fits soon subsided, and the patient recovered. Lead-poisoning may be a cause of eclampsia, and in all cases in adults the gums should be examined, and the occupation should be enquired into. In all cases of eclampsia the fundus oculi should be examined. The presence of albuminuric retinitis, or of optic neuritis, or other change gives valuable information as to the primary cause of the attacks. Eclampsia differs from epilepsy in that there is usually an evident cause for the attacks, and that they are not chronic and recurrent. As far as the fit is concerned there is no essential difference.

CONVULSIVE TIC.—HISTRIONIC SPASM.—Spasm, usually clonic, of the facial muscles. The spasm may be limited to the orbicularis palpebrarum (blepharospasm) or may affect all the muscles. Any cause of reflex irritation must be removed, such as carious teeth, worms, &c. If it is rheumatic, iodide of potassium and salicylate of sodium must be given. In many cases it is the result of mental overwork and prolonged anxiety. It is then a very obstinate and chronic condition. Rest of the body and mind,

change of air, and nervine tonics do good. Arsenic, zinc, and the bromides may be tried in combination. Galvanism is sometimes useful. Morphine injections in some cases have done good. If the affection is a great trouble to the patient, nerve stretching may be tried, but the result is not usually successful; still there is little danger, and temporary relief, at any rate, may be expected.

COUNTER-IRRITATION is often of great service in cerebral and spinal meningitis. After traumatic injuries, the repeated application of iodine or of blistering fluid often affords great relief. In cases of chronic otorrhœa with severe pain, counter-irritation behind the ear, with proper treatment of the ear condition, often does good. In cases of Jacksonian epilepsy, a blister over the cortical area affected, often checks the fits and will, in severe cases, restore consciousness.

CRAMP.—The painful cramps that occur in alcoholic paralysis, compression myelitis and other affections of the spinal cord and nerves, may be relieved by rubbing and warmth. A morphine injection offers the most certain and speedy relief. The bromides also, with chloral, often do good. Apart from organic disease, cramp of the calf muscles or of the abdominal muscles is common in drinkers. It occurs also from indigestion, flatulence, cold, constipation, and liver disorders. It is occasionally due to gout. Over exertion by straining the muscles is a potent cause. Anæmic

children often suffer from cramp in the night. The treatment will depend upon the cause present. A bromide draught at night with iron salts, in anæmic cases, usually suffices. The affected muscles must be well rubbed with belladonna liniment. The treatment of the professional cramps will be discussed later on.

CRETINISM. — If the cretinism is endemic, the child must be removed from the cretinous district at once. Cold and damp are especially dangerous, and must be guarded against by warm clothing, exercise, massage, and good food. Cod-liver oil and Parrish's food may be given internally with benefit. These cases may be immensely improved by judicious training and education, combined with proper hygienic treatment.

CRISES—

Bronchial	}	are recognised paroxysmal visceral affections, occurring occasionally in locomotor ataxia. A morphine injection is usually necessary for the relief of the patient.
Laryngeal		
Cardiac		
Vesical		
Urethral		
Rectal		
Gastric		

Gastric crises are the most frequent. They are attended with very severe pain and intractable vomiting, and may occur every day, rendering life a burden, and, in fact, may prove fatal. Laryngeal cases are usually relieved by inhalation of nitrite

of amyl. If abductor paralysis is present, tracheotomy may be required.

DELIRIUM is a very important and serious symptom occurring as a complication of febrile diseases, toxæmic conditions of the blood, and states of exhaustion. A fixed delusion may be present. In all cases, before a patient is sent to an asylum, the temperature should be carefully taken and a careful physical examination should be made. Delirium is usually worse at night, or only occurs at that time. Persons addicted to alcohol, neurotic people and children, are especially liable to delirium. The treatment will depend upon the cause of the delirium. If due to meningitis or encephalitis the usual remedies must be applied. If the delirium is active and attended with vascular excitement, the head must be shaved and ice or cold compresses employed. Full doses of bromide of potassium must be given, with or without chloral. Aconite and antimony are often useful. Sleep is essential, and cold sponging, sulphonal and chloralamide may be tried. If the delirium be of the low type, with a weak pulse, stimulants must be given freely, such as alcohol, ether, carbonate of ammonium and cinchona. It is important to see that the bowels are kept open, and that sufficient urine is excreted. The patient must be kept in bed in a darkened room and under constant supervision. Warm affusion is valuable in cases of asthenic delirium. The author recently saw a case

of enteric fever in which the patient had a fixed delusion, which seemed so natural that the friends were quite deceived by it. He imagined that he had bought a public house, and that it was imperative that he should go to the town where he had bought it to see after it. This delusion persisted for some weeks after defervescence, and finally disappeared quite suddenly.

DELIRIUM TREMENS (see ALCOHOLIC DELIRIUM).

DEMENTIA PARALYTICA. GENERAL PARALYSIS OF THE INSANE. — Sexual excess is the most potent cause of this dreadful malady. The disease often commences with an outbreak of acute mania, and in this condition the tincture of digitalis in twenty minim doses every four hours is highly recommended. Hyoscyamin may be necessary, and one-twentieth to one-tenth of a grain, hypodermically injected, will induce sleep in the most acute cases of mania in a few minutes. In many cases there is mental depression, which may be relieved by small doses of Indian hemp, one-sixth of a grain of the extract in a pill, three times a day, being usually sufficient. Calabar bean has been recommended for this disease, and I have seen great improvement in the mental powers follow its prolonged use. One of my patients recovered his memory, and was able to resume his occupation after a six months' treatment with this drug alone. Arsenic, iron, and strychnine are also

useful, especially when there is much debility. The food must be good and sufficient, and alcohol must be avoided. Many cases of general paralysis are to be met with in the out-patient departments of hospitals, and the disease can often be recognised long before delusions appear. Syphilis occasionally causes symptoms exactly like those of paralytic dementia. It is well to bear this in mind, and if the patient has had syphilis, iodide of potassium must be tried. The subjects of general paralysis should not be allowed to lie in bed, if they can possibly get up. Care must be taken to prevent bed sores, and the acts of deglutition and micturition must be observed and assisted if necessary. Asylum treatment is necessary sooner or later.

DIABETIC COMA. KUSSMAUL'S COMA.
—This is a very fatal form of coma occurring in diabetes, especially in young people. The treatment is mainly preventive. The subjects of diabetes mellitus should be warned against exposure to cold, over-exertion, and travelling, and also against constipation. A too sudden and too rigid alteration of diet may bring on coma. Acetonuria often precedes the onset of coma. Purgatives and alkalies may ward off an attack, and the patient should drink plenty of water. The comatose state is often associated with rapid and deep respiration. Purgatives should be tried with enemata. The injection of large quantities of water or of a saline

fluid into the veins has seemed to do good, but no recovery has followed this procedure.

DIABETIC NEURITIS. — Many nervous affections may occur in the course of diabetes. Neuralgia, when it occurs, is usually bilateral. Double sciatica should always arouse a suspicion of the presence of diabetes, or of some organic disease of the spine or cord. Numbness, tingling, cramps, or paralysis of one or more of the extremities may occur, and will be probably the result of neuritis. The treatment consists in appropriate dieting. Iodide of potassium, morphine, and codeina are of use. Massage and electricity are also useful. The knee jerk is often lost in diabetes, to reappear with an improvement in the health of the patient. Diabetics may suffer from angina, asthma, exophthalmic goitre, perforating ulcer, and insanity. Melancholia is especially common in diabetes. The treatment for these conditions is that for the primary disease.

DIAPHRAGM, CLONIC SPASM OF.—SINGULTUS.—HICCOUGH.—This occurs in many conditions. In hysteria, cachexia, from reflex irritation in gastric and intestinal disorders, from peritonitis, and pericarditis. It may be due to injuries or disease of the central nervous system. Nervine tonics such as iron, quinine, and strychnine, with antispasmodics such as the bromides, valerian, ether, and asafoetida are indicated. In obstinate cases morphine hypodermically, or

the inhalation of chloroform, may be necessary. Blisters over the epigastrium, and faradism or galvanism applied over the course of the phrenic nerves are useful, as are also the bromides in all cases.

DIAPHRAGM, PARALYSIS OF, is usually bilateral. It may occur in the course of progressive muscular atrophy, when it is a very serious complication, and usually ends fatally. Lead-poisoning and hysteria are also causes. It may result, too, from pleurisy and pneumonia, and from rheumatic neuritis of the phrenic nerves. If due to plumbism, iodide of potassium and faradism are needed; if to neuritis, counter-irritation, with faradism or galvanism.

DIAPHRAGM, TONIC SPASM OF, is a very serious occurrence, and occasions great dyspnœa, cyanosis, and pain. It may occur in the course of tetanus, or independently from cold. Morphine hypodermically, or the inhalation of chloroform, will be necessary. The faradic brush to the phrenic nerves is occasionally useful. The bromides are also indicated.

DIPHTHERITIC PARALYSIS.—This is a common sequel to diphtheria, usually setting in three or four weeks from the first onset of the disease. Death may occur from asphyxia, due to paralysis of the respiratory muscles, or from impaction of the food over the glottis when the pharynx is paralysed. The patient may die from

syncope, or from exhaustion. The nature of the sore throat is often not recognised until paralysis supervenes. The paralysis is due to an acute multiple neuritis, the nerves of the lower extremities being more affected than those of the upper, and the resulting paraplegia may last twelve months or more. The rule is for recovery to be complete. Diphtheritic paralysis may possibly be prevented by the early administration of iron, strychnine, and quinine, with plenty of nutritious food. It is very important to attend to the feeding of the patient, and pulpy food may be taken when it is impossible for the patient to swallow liquids. It may be necessary to feed with a tube, and then great care must be taken that sufficient is given. Alcoholic stimulants must be given if there are any signs of heart failure. In severe cases, absolute rest in bed is essential; and if there is any tendency to syncope, digitalis must be prescribed, and the patient must be kept absolutely recumbent. Artificial respiration may be necessary when the diaphragm is affected. Where the respiratory muscles are paralysed, Duchenne recommended reflex stimulation of the respiratory centre by faradism applied to the back of the chest. Iron and strychnine are the most useful drugs, and the latter may be pushed till large doses are taken. The paralysed limbs must be kept warm, and must be rubbed, the treatment being that for neuritis. Galvanism or faradism may be applied

daily, the current employed being that to which the muscles respond. In one case of the author's, though there was absolutely no response to the powerful continuous batteries at his disposal, the patient had, nevertheless, completely recovered within two years. The bladder must be attended to in all cases, and especially where it is weakened or paralysed. Fly blisters applied along the spine sometimes do good.

DIPSOMANIA.—The Weir Mitchell treatment by seclusion, rest, good feeding, and massage is useful. Compulsory detention for a lengthy period is the only real remedy. Hypnotic suggestion is said to have cured cases.

DISSEMINATED SCLEROSIS.
MULTIPLE OR INSULAR SCLEROSIS.—The possibility of syphilis as a cause must be borne in mind, and if there is a suspicion of this, antisyphilitic remedies must be fully tried. The disease is usually quite unaffected by any mode of treatment. Arsenic is the best drug, and nitrate of silver has done good in some cases. Belladonna, quinine, and ergot may be tried. Phosphorus is rarely of much use in degenerative disease of the nervous system. Hammond has recommended chloride of barium in half grain doses three times a day. Hydropathy, Turkish baths, galvanism to the spine, a good diet, and cod-liver oil are all useful and should be tried.

DORSO-INTERCOSTAL NEURALGIA.—

The cause should be carefully sought for. The chest should be explored for aneurism, and the spine for caries, and, if either disease be present, the appropriate treatment must be prescribed. In simple neuralgia, a fly blister over the tender points often gives immediate relief. The liniments of belladonna, aconite, and chloroform, are all useful. Morphine hypodermically is very efficacious. As in all cases of neuralgia, except when due to gout, the diet should be full, and plenty of meat should be given. Cod-liver oil, arsenic, and quinine, are useful. Antipyrin may prove successful. In obstinate cases iodide of potassium should be tried, as also should gelsemium. Galvanism is a powerful remedy for this, as for other forms of neuralgia; the cathode should be placed on the spine, the anode on the painful points. The application of solid menthol, or of a strong solution, often gives immediate relief. If herpes zoster is present, the vesicles should be protected with cotton wool. Ferris' anodyne amyl colloid is a very useful application for zona, and usually gives great relief to the pain. It contains veratria and other anodynes. If rheumatism is suspected as the cause, the salicylate of sodium should be given. Aconite internally is useful, and phosphorus is successful in some cases of neuralgia, but it is uncertain. If anæmia is present, the carbonate of iron is very useful.

DREAMS are of common occurrence in the insane; in epileptics, dreams often precede fits. Constipation, indigestion, over-work and worry, are common causes. These conditions, if present, must be corrected, and sedatives such as chloral and the bromides, and chloralamide, may be given at bed time. Heavy meals, late in the day, should be avoided. Night terrors of children are often associated with dreams. They occur generally in children over-worked at school, and perhaps insufficiently fed. A sedative draught at night, consisting of chloral and the bromides with nervine tonics, such as Parrish's food and cod-liver oil, together with rest from school work, usually quickly effect a cure.

DUCHENNE'S DISEASE. PSEUDO-HYPERTROPHIC PARALYSIS. — Duchenne recommended faradism in these cases. Gymnastic exercises are of very great importance, and the patient must be kept on his legs as long as possible. When contracture of the calf muscles takes place, tenotomy must be performed, and if necessary repeated. Cold sponging and friction is beneficial. The nervine tonics, such as arsenic, strychnine, cod-liver oil and iron salts are sometimes useful. The progress of the malady is far less rapid when it affects adults. A cure must not be expected. In all cases, warm clothing is necessary, and the patient should be protected against exposure to cold.

DYSENTERY.—In this affection paraplegia sometimes occurs, which may be due to myelitis or to peripheral neuritis. The treatment is that for dysentery. Diarrhœa must be checked.

DYSPHAGIA.—This condition may be caused by paralysis of the pharynx and œsophagus. This is apt to occur in bulbar paralysis, progressive muscular atrophy, or from diphtheria or syphilis. When it occurs from the two former diseases, it is very serious and of fatal omen. The patient may die from gangrene of the lung, or from lobular pneumonia, caused by the entrance of food into the air passages. Dysphagia, of course, occurs in stenosis of the œsophagus. Dysphagia is also caused by tubercular laryngitis. In all cases, a careful examination with the laryngoscope should be made. The patient should be fed with a tube, and the treatment will be dictated by the conditions present. In hysteria, dysphagia may be caused by spasm of the œsophagus or pharynx. It is usually, however, intermittent, and there is not the emaciation which is usually marked in cases of organic stricture. Isolation and the use of the œsophageal tube usually cure these cases. Great care must be taken in the use of the œsophageal bougies, especially where the existence of an aneurism is suspected.

DYSTROPHY. — Various disturbances of nutrition follow injuries or diseases of the nervous system, such as Charcot's joint disease, glossy skin,

perforating ulcer, alterations in the nails, hair, and secretions. The treatment is that for the primary disease.

EAR DISEASE (see ABSCESS OF THE BRAIN).

ECHOLALIA is a peculiar form of speech derangement occasionally met with in idiots and imbeciles. The patient repeats everything that is said to him, usually, however, leaving out the first words of a sentence. No treatment is of avail.

ECLAMPSIA (see CONVULSIONS).

ECLAMPSIA NUTANS, or bilateral clonic spasm of the sterno-mastoid muscles, is a very rare affection. It occurs usually in infancy, and is extremely rare except in children. Cod-liver oil and iron, together with a small dose of bromide of ammonium, cured two cases seen by the author.

ECSTASY.—A peculiar mental state occasionally, though now-a-days rarely, met with in cases of hysteria. The patients see visions, often of a religious character, and they are quite oblivious of surrounding objects and events. The condition is often typically seen in hystero-epilepsy. The Weir Mitchell treatment must be tried, and it is essential to remove the patient from among her friends, and isolate her.

EDUCATION.—A proper education and training in early life are of the utmost value in the prevention of nervous diseases later on. Neurotic children, if kindly but firmly and judiciously

brought up, will prove useful members of society; but, if pampered and kept from school and yielded to in all their whims, they will grow up wayward and useless members of society. They frequently become hypochondriacal, hysterical, neurasthenic, or insane in mature life. Where hereditary neurosis is present, a judicious firmness on the part of the parents and careful training, with attention to the laws of hygiene, may carry the individual safely through life.

ELECTRICITY is of great value in the treatment of many affections of the nervous system. Three forms of electricity are used in medicine. The induced or faradic, the continuous galvanic or voltaic, and static electricity or franklinism. If excitation of sensory or motor nerves is required, the faradic current is indicated. In cases of paralysis where the faradic irritability is preserved, this current may be employed. The galvanic current has sedative, anodyne, thermal, and catalytic properties, and is indicated where there is spasm, neuralgia, or muscular atrophy. Franklinism has not been much used, but is recommended for sciatica, facial neuralgia, facial spasm and emotional aphonia. The works of De Watteville and Hughes Bennett should be read by all practitioners desirous of acquiring a knowledge of electro-therapeutics and electro-diagnosis. A galvanometer should always be used, so that the dose given may be regulated. In cases where the

re-action of degeneration is present, galvanism must be applied daily, the object aimed at being to preserve the muscular nutrition until volitional impulses become again effectual in causing muscular contractions. It is important not to use a stronger current than is necessary, and not to alarm the patient or cause much pain. The galvanic current has great power to relieve pain. Headaches, lumbago, and sciatica are nearly always benefited by a continued application of galvanism. In hysteria and its diverse manifestations, the faradic current is the more powerful, producing a far greater moral effect than the galvanic current. In cases of paralysis from recent brain, cord, or nerve lesion it is very important not to commence the use of electricity too soon, and, as a general rule, at least a month should elapse before it is employed.

EMBOLISM.—In embolism of the cerebral arteries, coma is not usually present, but it may be, and then great care is needed that a proper diagnosis be made, for energetic treatment might do serious harm. If coma be present, a mustard plaster may be applied to the nape of the neck, and the head and the body may be slightly raised, all clothing around the neck being loosened. If the heart is irregular, digitalis is indicated, as it tends to lessen the formation of clots in the heart, and to prevent embolism. Purgatives may be given with care, but violent purgation is harmful. Alcoholic stimulants are usually necessary in moderate

quantities. The patient must be kept in a state of absolute mental and bodily rest, and on no account must he be allowed to get out of bed. If there is much febrile reaction and encephalitis, an ice bag must be applied to the head, and the bromides may be prescribed. When the inflammatory stage is over, nervine tonics such as iron, quinine and strychnine are necessary. In the treatment of the resulting paralysis, it is important not to employ faradism or galvanism for at least two months after the attack, and then only gentle currents, and without exciting any alarm in the mind of the patient. Massage is useful. The foot should not be allowed to drop, and flexion of the fingers may be treated by faradisation of the extensor muscles. Cod-liver oil is useful in all cases of softening of the brain.

EMPROSTHOTONOS.—A position of the body brought about by predominating spasm of the abdominal muscles in tetanus. The treatment is that for tetanus. If due to hysteria or hysterio-epilepsy, the usual remedies, such as isolation, anti-spasmodic medicines, &c., must be tried.

ENDOARTERITIS - SYPHILITICA. — In this affection there is inflammation of the inner coats of the arteries, with narrowing of the lumen. This condition affecting the cerebral arteries may produce a condition very similar to that observed in general paralysis of the insane. If, in a patient who has had syphilis, such symptoms as dementia,

hebetude, and somnolence occur, this condition should be suspected, and iodide of potassium with mercury should be freely given. Thrombosis is especially liable to occur in such cases, and the resulting softening is often unamenable to antisyphilitic treatment, the thrombus itself not being syphilitic and removable. Syphilitic cerebral thrombosis often leads to very severe and incurable hemiplegia. Cod-liver oil is a useful remedy in all degenerative diseases of the blood vessels.

ENTERALGIA.—COLIC.—NEURALGIA OF THE MESENTERIC PLEXUSES.—Indigestible food, exposure to cold, and lead-poisoning are common causes. It may occur in neurotic individuals without evident cause, and in them is best treated with nervine tonics, such as arsenic, quinine and iron. The treatment depends upon the cause. Castor oil with a small dose of opium is necessary if any irritating food has been taken. Iodide of potassium must be given in cases of plumbism. Hot fomentations and anodyne liniments are useful, but immediate relief must be given in bad cases by a morphine injection.

EPIDEMIC CEREBRO-SPINAL MENINGITIS (see MENINGITIS).

EPILEPSY.—The general management of epileptic patients is of great importance. Daily out-door exercise, short of fatigue, and a moderate amount of mental work are necessary. It is a mistake to keep epileptic children altogether away

from school. I find that they are much better for a few hours instruction daily. At the same time their lessons must not be made a worry to them, and should be of moderate duration. Constipation, if present, must be remedied. The diet should consist of the ordinary food, but meat should be given sparingly, and milk in some form or other, is beneficial. Alcohol should not be taken, or, if at all, in great moderation. Tea and coffee also must be taken sparingly. Smoking is injurious, and all bad habits must be given up. In every case an exciting cause must be looked for, such as masturbation, uterine and ovarian mischief, nasal and post-nasal growths, alcoholism, and injuries to the head. A careful examination of the scalp for scars should be made if there is any history of injury. Worms may be the cause of the attacks, and should be looked for, especially in children. A quiet life, free from mental excitement, is necessary, and cold sponging, or the application of cold water to the head does good. In all cases of suspected epilepsy, the urine should be examined for albumen, the fundus oculi for retinitis or optic neuritis, and the heart for aortic regurgitation. When a patient states that he suddenly drops down when walking, the probability is that epilepsy is the cause, but I have met with several cases where the cause was syncope, occurring from aortic regurgitation. Syphilis as a cause of epilepsy must be borne in mind, and should be

suspected if the attacks are preceded by headache. In all cases where there is a local aura, it is important to abort the attack, if possible, by a ligature, or a handkerchief, or a piece of tape applied round the limb, and the attack may sometimes be aborted by forcibly opposing the contraction of the muscles that are first convulsed. The most useful drugs in the treatment of epilepsy are the bromides of potassium, ammonium, sodium, and lithium. The bromides of sodium and lithium are less powerful than those of potassium and ammonium, but are sometimes better borne by the stomach. A combination of bromide of potassium with bromide of ammonium acts better than either drug by itself. In all cases a prolonged treatment is necessary, and Brown-Séquard states that the bromides should be continued for at least two years after the fits have ceased, and then must only be gradually discontinued. The dose of the bromides necessary to control the fits can only be found by experiment in each individual case, and varies with the individual. The dose must be increased till the fits are controlled, and the time for the administration is regulated by the time of occurrence of the fits. Epileptic attacks most commonly occur at the time of waking or just as the patient gets out of bed, probably from the change in the cerebral circulation. Hamilton states that a dose of sal volatile or other stimulant taken then may ward off the attack. The patient should

always have a dose by the bed side. Usually it is better that a large dose be given at night, the effects wearing off before the morning, and a small dose in the morning. Belladonna or atropine or digitalis may be added, especially in cases of nocturnal epilepsy.

R. Potass. bromid. gr. xx.
Ammon. bromid. gr. xx.
Tinct. bellad. ℥ xv.
Aq. camph. ad ̄ i.

Misce.

Sig. ̄ i. to be taken at bedtime.

̄ss. to be taken in the morning before breakfast.

The minimum dose capable of controlling the attacks is to be found, and then the medicine must be continued without interruption. The bromides must not be discontinued altogether if bromism occurs, but must be diminished. As a rule, a drachm of the mixed bromides daily is quite a sufficiently large dose. Gowers recommends the following mode of administration in cases in which moderate doses stop the fits. He begins with two drachms every second morning, increasing to three every third, and four every fourth; the dose and interval are then reduced in the reverse order, so as to spread the course over about six weeks. It is not advisable to give more than three drachms at a dose. If the bromides alone fail, they must be tried in combination with atropine, digitalis, or ergot. In a minority of

cases the bromides have no effect at all over the fits, a patient passing quickly into a state of bromism, and becoming almost imbecile. In these cases, the bromides must be at once discontinued, and the salts of zinc should be tried. Borax in twenty-grain doses three times a day, with or without ergot, sometimes acts marvellously in cases not relieved by the bromides. Ergot seems a very useful drug in epilepsy, especially where the disease has followed masturbation. Nervine tonics should be given simultaneously with the bromide treatment, and arsenic is excellent. Strychnine and iron are also very useful. Cod-liver oil is very beneficial to epileptics. If the bromide treatment fails, the salts of zinc should be tried. The lactate of zinc may be given in three-grain doses, rapidly increased till twenty or more grains are taken for a dose, or the bromide or sulphate may be given in the same way. The oxide of zinc, combined with belladonna, is also useful. If the zinc salts fail, nitrate of silver may be tried. Nitro-glycerine, in the tablet form of the pharmacopœia, or in solution, is sometimes efficacious, especially in the petit mal. Nitrite of amyl is useful as an abortant only. Chloral is very useful in children, and they bear this drug better than the bromides. Iodide of potassium should be given in all obstinate cases, and should be pushed if there is any suspicion of syphilis as a cause. No drug can be looked upon as a specific for epilepsy, and no two cases are

exactly alike. The drugs useful in epilepsy, then, are, in order of potency :—The bromides, zinc salts, arsenic, nitrate of silver, belladonna, digitalis, ergot, strychnine, cod-liver oil, opium, chloral, nitro-glycerine, and amyl nitrite. Digitalis is very valuable if there is any cardiac weakness present, and Indian hemp is useful when headache is marked. In the attack the patient should not be interfered with, except that biting of the tongue must be prevented by a piece of india-rubber wrapped in a handkerchief, the head should be placed on one side, and care should be taken that the patient does not injure himself against articles of furniture, or turn over on his face. Epileptics should not be allowed to climb ladders, or to bathe, and especial care should be taken in cases of procursive epilepsy that the patient is kept on the ground floor. I recently saw a workman who suffered from procursive epilepsy ; he worked in a top room of his works, and in an attack would rush to the lift, and once dropped down. The nurse of the epileptic wards at the infirmary tells me that each epileptic has her attacks in her own individual way. One will always micturate, one will vomit, another will defecate, one will roll on her face, and another rush out of doors, but she can always tell how each one will be and how to manage her. After the attack it is best to leave the patient alone and let him sleep. Care must be taken to empty the mouth with a spoon when an attack comes on

at meal times. The status epilepticus is a very serious condition, in which the patient has fit after fit, not recovering consciousness in the intervals. The temperature rises to 103° F. or more, and the condition is often fatal. Inhalation of nitrite of amyl, or of chloroform, is very useful, but I have found the most efficacious treatment to be the administration of enemata of chloral and bromide of potassium. For an adult, a drachm of chloral with two drachms of bromide of potassium, with a little brandy, may be injected every two hours till the fits cease. Ranney lays great stress on the potency of errors of refraction and ocular disturbance as causes of epilepsy.

EPILEPTIFORM NEURALGIA.—This term was applied by Trousseau to severe and obstinate cases of trigeminal neuralgia. It is usually of central origin, and occurs in neurotic families, being decidedly hereditary. Either the first, second or third division of the fifth nerve may be affected, and usually one only of these divisions. In all cases a careful examination of the skull must be made. If syphilis be suspected, the appropriate treatment must be adopted. Cod-liver oil and a plentiful diet, containing meat, is necessary. Morphine is the most useful remedy; it may be given in the form of a pill, or hypodermically near the seat of pain. Very large doses are tolerated in this disease. Arsenic, quinine, gelsemium, and tonga may be tried. Of the latter

drug one or two drachms of the liquid extract may be given frequently. Antipyrin and exalgine may also prove useful. The attacks usually last only a minute or two, but recur very frequently ; there may be hundreds of attacks in the twenty-four hours. Galvanism is sometimes useful ; the anode is applied over the painful points. In alveolar neuralgia, or where the pain is in the inner surface of the lips, the patient should carry a small bottle containing a ten or twenty per cent. solution of cocain, and should apply it with a brush when the pain comes on. Great relief is usually obtained in this way. Anodyne applications, such as the ointment of aconitia and veratria, sometimes give relief. Neurectomy and neurotomy may relieve for a time, but the pain soon returns, and a cure rarely if ever results. In neuralgia of the second division of the fifth nerve, excision of Meckel's ganglion has given better results than division of the nerve as shown by Mr. Chavasse. In all cases, stretching of the nerve should be first tried. TIC-DOULOUREUX—TRIFACIAL NEURALGIA—or PROSOPALGIA means neuralgia of the fifth nerve. The disease is usually due to exposure to cold, malaria, syphilis, rheumatism, or anæmia. All causes of reflex irritation must be removed. The existence of any anæsthesia would prove that the case was not simply one of neuralgia ; the fundus oculi should be examined, and the existence of some lesion causing pressure on the nerve should be

suspected. The treatment must be directed to the cause. The remedies enumerated in the treatment of epileptiform neuralgia may be tried. Iron, arsenic, and cod-liver oil must be given in anæmic cases. Gelsemium and quinine should be fully tried. Indian hemp and croton chloral hydrate are useful.

ESSENTIAL PARALYSIS OF CHILDREN (see ANTERIOR POLIO-MYELITIS).

EXHAUSTION from diarrhœa, starvation, or other cause may, especially in children, stimulate meningitis. This condition has been named by Marshall Hall "hydrocephaloid." The child is collapsed, somnolent, or comatose, the temperature is subnormal, and the fontanelle depressed. It is very important not to confuse this condition with meningitis, for any depressing treatment would take away whatever slight chance of recovery there might be. Stimulants and warmth, with appropriate remedies for diarrhœa, or other debilitating influence at work, are necessary. Cod-liver oil and syrup of the iodide of iron are useful in exhausted children after the diarrhœa has been checked, and any catarrhal condition of the alimentary tract removed.

EXHAUSTION PARALYSIS.—This affection has been clearly described by Feré, "Brain," 1888. After prolonged effort, paralysis may supervene either of one arm, or it may be

hemiplegic in distribution. The so-called hammer palsy is a variety of this affection. I recently ("Lancet," 1889) reported the case of a woman, who, after standing for many hours, was seized with violent cramps in the right leg, followed by absolute paralysis. She recovered completely in a few days. Morphine hypodermically is most efficacious for the cramps. Massage, absolute rest in bed, and galvanism, together with small doses of the bromides and nervine tonics, such as iron, strychnine, and quinine, usually quickly cure such cases.

EXOPHTHALMIC GOITRE (see BASEDOW'S DISEASE).

EXTERNAL PACHYMENINGITIS is usually secondary to injury or adjacent bone disease. It is especially common in connection with ear disease and spinal caries. Iodide of potassium, syrup of iodide of iron, counter-irritation and suspension or trephining in spinal caries are the usual remedies.

EXTERNAL RECTUS, PARALYSIS OF.—This may be caused by syphilis, rheumatism, diphtheria, locomotor ataxia, alcoholism or intracranial growths. The treatment should be directed to the cause. Iodide of potassium must be pushed in syphilitic cases, and mercury must be given also. The iodide is useful also in rheumatic cases. Counter-irritation in the shape of a blister to the temple is very efficacious in an early stage of

rheumatic neuritis. The paralysis in locomotor ataxia is usually transitory, and gets well of itself. In diphtheritic paralysis, the usual nervine tonics such as iron, strychnine, and quinine must be given. Electricity may be tried, but is not of much use.

EYELIDS, DROPPING OF.—Ptosis may be uni- or bi-lateral. It may be due to paralysis of the third nerve, or of its branch to the levator muscle which may be caused by syphilis, diphtheria, exposure to cold, alcoholism, or locomotor ataxia. Ptosis may be congenital, and may run in families. It is common in neurasthenic women, and is of common occurrence in the morning, hence the term “morning ptosis.” Sometimes such patients cannot open their eyes for an hour or more after awaking, but the ptosis gradually wears off during the morning. Ptosis occurs in ophthalmoplegia externa, and it may also be reflex from irritation, especially in the area of distribution of the fifth nerve. Hysterical ptosis may be uni- or bi-lateral. It may be readily detected by the nictitation and spasm of the orbicularis which occurs when the patient is directed to look upwards. The treatment will of course be directed to the cause. If the ptosis is recent and due to exposure, a blister on the temple, leeches, and warm fomentations do good. Iodide of potassium and mercury internally are indicated. Later on nervine tonics, such as arsenic, iron, and strychnine, must be given. In hysterical ptosis, faradisation and

counter-irritation in the shape of blisters do good, and the other eye should be covered. In the ptosis of neurasthenia, nervine tonics and galvanism applied to the eyelids are useful. Ptosis may be due to paralysis of the sympathetic nerve. I recently saw a woman with a carotid aneurism pressing on the cervical sympathetic nerve. The ptosis, which was very considerable, disappeared after ligature of the artery on the proximal side.

EYE.—An examination of the fundus oculi is of the utmost importance in the diagnosis of nervous diseases. The correction of errors of refraction often at once relieves a previously incurable headache.

FACE, SPASM OF.—(SPASMODIC TIC.)—
See page 33.

FACE, UNILATERAL ATROPHY OF.—
See page 27.

FACIAL NEURALGIA (see EPILEPTIFORM NEURALGIA).

FACIAL PARALYSIS.—See page 29.

FARADIC IRRITABILITY.—This is of the greatest importance in the diagnosis of the situation of the lesion in cases of paralysis. If it is preserved we know that the lesion is not of the nerve trunks or of their nerve nuclei, but that it is either in the brain, or if in the cord outside the motor nerve cells, in the anterior cornu. If the faradic irritability is preserved in peripheral nerve

lesions, then the lesion is slight and the paralysis will soon be recovered from. Loss of the faradic irritability proves the presence of a lesion of the nerves, or of their trophic nuclei. Muscles and nerves respond to galvanism, but the nerves alone possess faradic irritability, and when they are diseased the muscles fail to respond to the faradic current. In all cases where faradic irritability is maintained, this is the current to be used.

FEIGNED DISEASES.—The faradic brush is often a useful mode of treatment in these cases, and is also a valuable aid in diagnosis. A diminished diet, the patient being informed that it will be augmented as he recovers, is also a useful means of treatment, especially in cases where the diagnosis is not absolutely certain. In one case of malingering, where the patient complained of repeated vomiting, he was quickly both disgusted and cured by being fed with enemata.

FEMORAL NEURALGIA.—Neuralgia may affect the lateral cutaneous nerve, the anterior crural or the obturator nerve, and one or both thighs may be the seat of pain. In all cases of bilateral neuralgia diabetes, gout, locomotor ataxia, or disease of the spine must be looked for. Even when the pain is unilateral, the spinal column must be carefully examined and each iliac fossa explored, for spinal caries may be latent, and is often a cause of supposed femoral neuralgia. The treatment will be guided by the condition discovered to be

the cause of the pain. In idiopathic neuralgia, arsenic, quinine, cod-liver oil, morphine hypodermically, fly blisters, and galvanism are useful. In diabetic neuralgia, morphine and appropriate dieting, in the gouty form alkalies and colchicum, are indicated.

FIBRILLARY CONTRACTIONS are of common occurrence in progressive muscular atrophy, but may occur in any wasting disease. They are apt to occur in the calf muscles after much exertion, and sometimes are followed by wasting. Galvanism is the most efficacious mode of treatment. Strychnine injected locally, with massage, is also useful, the cause being removed as far as possible.

FIFTH NERVE.—Anæsthesia in the area of distribution of the fifth nerve should at once direct attention to the fundus oculi. It is often due to an intracranial growth, and the treatment will depend upon the nature of the growth. It may occur from neuritis due to exposure, or from neuritis occurring in locomotor ataxia, or other chronic degenerative disease. It may follow an attack of migraine, and is then transitory. Faradism, counter-irritation, and iodide of potassium may be tried. Paralysis of the muscles supplied by the motor division of the fifth nerve is to be treated according to the nature of the lesion present. If syphilitic, energetic antisyphilitic treatment must be adopted, and faradism or galvanism employed. SPASM

OF THE MUSCLES SUPPLIED BY THE FIFTH NERVE.—Trismus or masticatory spasm may be due to tetanus, hysteria, exposure causing neuritis; or it may be due to intracranial growths or meningitis, or to reflex irritation, either in the area of the fifth nerve or in some remote part. When due to exposure, to reflex irritation, or hysteria, the prognosis is favourable. In rheumatic cases, diaphoretics, iodide of potassium, morphine hypodermically, hot fomentations, and, later on, galvanism, are useful. In all cases care must be taken that the patient is properly fed, a tube being passed through the nose, or nutrient enemata being used if necessary. In chronic cases, an anæsthetic should be given, and the jaws must be separated by a gag. The bromides and chloral are the most useful drugs in tetanus. A source of reflex irritation must be searched for, and removed if present.

FLATULENCE occasionally occurs to an enormous degree in cases of hysteria. It may be generally relieved by the injection of an enema, consisting of an ounce of the tincture of asafoetida in a pint of water, or a long tube may be passed into the colon. Flatulence sometimes follows nervous exhaustion produced by overwork, and may be very persistent. Nervine tonics, especially strychnine, with careful dieting, are necessary. One grain doses of carbolic acid with a little glycerine often give great relief.

FLEXIBILITAS CEREÆ.—This term is applied to the “wax-like” rigidity of the muscles observed in catalepsy. The limbs remain in any position in which they are placed, and offer only a slight resistance to passive movement, as if they were made of wax. Faradism and cold water douches are usually efficacious, but isolation and separation from the friends are essential.

FORMICATION is the name applied to a peculiar sensation of creeping and pricking occasionally felt by tabetic patients. It occurs occasionally in hysteria, hypochondriasis, and gout. It is also produced by morphine and ergotine. The treatment will depend upon the cause present in each case. Galvanism, massage, and frictions, with perhaps small doses of the bromides, give relief.

FRACTURES.—Spontaneous fractures of the bones may occur in locomotor ataxia and other nervous disorders. It is not rare in cases of idiocy. An idiot at the workhouse infirmary first fractured his forearm, and then shortly after his thigh, and, as he was bedridden, no cause could be discovered for the accidents. There was no bruising, and the boy had not been out of bed. He was given cod-liver oil, and no other fractures occurred. It is important to remember the occurrence of these fractures, as, otherwise, attendants may be unjustly blamed. In all mental cases the greatest care

should be taken in the handling of the patients, especially in the aged.

FRIEDREICH'S DISEASE, OR HEREDITARY ATAXIA.—This being a developmental affection is not amenable to treatment. I have tried suspension in four cases, and in one case incontinence of urine was cured by its use, but the ataxia was not relieved. A plaster jacket may be applied to prevent spinal curvature.

FUNCTIONAL PARAPLEGIA.--Paraplegia may result from hysteria, anæmia, ovarian irritation, worms, phimosis, and malaria. It may also depend upon idea. I have met with several cases where neurotic individuals after slight injury, usually a fall, have imagined that they had lost the use of their legs. I have found that these cases can be at once cured, even after the paralysis has been of some years' duration, by telling them that they will be immediately cured by the application of the battery. A faradic shock, and the assurance of complete recovery, have been immediately successful in my cases. The nature of malarial paraplegia is not understood. I have met with one case of periodical paraplegia due to malaria, in which the patient recovered under the influence of arsenic and quinine. The hysterical form is sometimes very obstinate, but usually yields to faradism. Paraplegia from lead or arsenical poisoning often depends upon neuritis, and is to be treated with iodide of potassium, electricity, and

massage. Anæmic paraplegia is apt to occur after great losses of blood, especially at the time of child-birth. Iron and arsenic, with a nutritious diet, friction to the spine, and galvanism are useful.

GASTRALGIA, OR GASTRODYNIA, occurs in hysterical and anæmic women. There are distinct attacks of severe pain at the epigastrium and in the back. The pain is relieved by food and pressure, and the tongue is usually clean. Iron and arsenic must be given in anæmic cases. Bismuth, oxide of silver, Indian hemp, and opium are useful. Cocain in grain doses often gives immediate relief, and morphine is necessary in severe cases. Daily galvanism, the cathode being placed on the epigastrium and the anode on the sternum, is useful in chronic cases. In all cases the dieting and habits of life must be enquired into, and rectified if necessary.

GASTRIC CRISES consist of attacks of vomiting and pain at the stomach, which occur occasionally in cases of locomotor ataxia; these may take place almost daily, and prove fatal by exhausting the patient. In a case of locomotor ataxia recently under my care, attacks of vomiting had invalidated the patient for some years. During the attacks the patient must be fed with nutrient enemata, and morphine must be administered hypodermically. Cocain given by the mouth in grain doses is sometimes efficacious, and galvanisation may do good, the cathode being placed on the

epigastrium, and the anode being passed over the head or on the cervical region.

GENERAL FARADISATION.—This mode of application of faradism has been strongly recommended by Beard and Rockwell for the treatment of general nervous disorders, such as neurasthenia, hysteria, neurotic dyspepsia, hypochondriasis, &c. The whole body is brought under the influence of the current, the feet resting on a copper plate which forms one electrode of the battery, the other electrode being applied to the head and moved over the spine and down the neck. Strong currents must not be applied to the head, and in no case should pain be caused. The current should be used daily for about ten minutes or more, according to its effects, and the treatment should be continued for some months. General galvanisation may be employed in a similar manner.

GENERAL PARALYSIS OF THE INSANE.—See page 68.—Asylum treatment is necessary sooner or later. For epileptiform attacks the bromides are useful. In apoplectiform seizures counter-irritation to the nape of the neck, and purgatives, usually restore the patient to consciousness. In attacks of excitement, the hydrobromate of hyoscine, gr. $\frac{1}{2000}$ th to $\frac{1}{50}$ th, by the mouth, is very effectual in quieting the patient. If there is any difficulty in deglutition, the food should be pulpy, and the patient should be watched while eating. Bed sores must be guarded against, and the patient

must be kept out of bed as much as possible. If there is any suspicion of syphilis as a cause, the usual remedies should be given. Trephining has recently been recommended, but it has been performed in one or two cases only.

GIRDLE PAIN.—This is a valuable symptom of organic disease of the spine or spinal cord, and is rarely, if ever, present in hysteria. In all cases a careful examination of the spine must be made, and the treatment will depend upon the diagnosis arrived at. In cases of locomotor ataxia, counter-irritation to the spine, galvanism, or suspension may be tried. In severe cases morphine, hypodermically, may be necessary. Antipyrin, salicylate of sodium, and phenacetin will often give temporary relief. If an aneurism be present, absolute rest in bed, and the administration of iodide of potassium, as a rule, relieve the pain. If spinal caries be present, suspension, a Sayre's jacket, and rest in bed are necessary.

GLOBUS.—This term is applied to the peculiar feeling of suffocation experienced by neurotic and hysterical women. It usually supervenes in these subjects upon any emotional disturbance, and may cause very great discomfort. Galvanism and the passing of œsophageal bougies are usually effectual. The general condition must be attended to, and the administration of antispasmodics, such as valerian, asafoetida, and sumbul, with small doses of the bromides, is indicated. Isolation may be

necessary. There is spasm of the œsophagus in most cases which can be felt when the œsophageal bougie is passed.

GLOSSALGIA occasionally occurs as a form of epileptiform neuralgia. The application of a ten per cent. solution of cocain will give immediate, though only temporary, relief. Care must be taken that the cocain habit is not acquired. The usual treatment for neuralgia must be tried. Galvanism may be employed with benefit.

GLOSSOPLEGIA.—Paralysis of the tongue occurs in various forms of bulbar paralysis, occasionally in late stages of locomotor ataxy, or from intracranial growths compressing the hypoglossal nerves. The tongue may be paralysed on one or both sides. Mastication, speech, and deglutition are all much disordered and impeded. Care must be taken with the food. Galvanism or faradism may be applied directly to the tongue, or to the hypoglossal nerve in the neck above the great cornu of the hyoid bone.

GLOSSY SKIN.—This condition was first described by Sir James Paget. It occurs especially in the fingers and toes after injuries of the peripheral nerves, or in cases of peripheral neuritis. The condition named causalgia by Weir Mitchell is often present. Galvanism and counter-irritation to the nerves are sometimes useful.

GLOTTIS, SPASM OF (LARYNGISMUS STRIDULUS), is very common in rickety children.

It is of great importance to see that children suffering from this affection are not coddled, and they should have plenty of fresh air. Cod-liver oil and Parrish's food should be prescribed, and a mixture of the bromides with chloral should also be given. Sponging with cold water will usually check an attack, but the inhalation of chloroform may be necessary. Any cause of reflex irritation that may be present must be removed.

GLYCOSURIA.—Neurotic people frequently pass sugar in their urine after worry and overwork, distinct attacks of glycosuria occurring, the patient being well in the intervals. A sea voyage, rest from work, and nervine tonics, as a rule, soon cause a disappearance of the sugar. Glycosuria is also apt to occur in exophthalmic goitre, angina, sciatica, and other nervous affections.

GOUT.—Headache, neuralgia, which is often bilateral and very obstinate, and temporary weakness of one or more of the limbs, are apt to occur in gouty subjects. Disorders of sensation, numbness, tingling, and formication are very frequent. These symptoms are supposed to depend upon neuritis. It is important not to mistake these symptoms for those of a cerebral attack. Appropriate dieting, iodide of potassium, lithium salts, and colchicum are indicated. Faradisation is useful for the removal of the sensory disorders, and the bromides and Indian hemp for painful affections. Antipyrin is also of great value in ten

grain doses in gouty neuralgia. The same series of symptoms may occur in diabetes.

GRAPHOSPASM, WRITER'S CRAMP.—The treatment for this and other professional spasms, such as telegraphist's cramp, pianist's cramp, tailor's cramp, &c., is much the same. Absolute rest from the work producing the affection is necessary, and the earlier this is taken the more efficacious it is, and the less the duration needed. A prolonged rest for six months or more is often required. In all cases, as soon as any difficulty is experienced in writing, the patient should be instructed to write freely from the shoulders, as it is those who have to write a cramped hand that suffer most. A thick penholder made of cork, and about an inch in diameter, with a quill nib, can often be used, when an ordinary pen at once causes cramp. I have recommended the bracelet invented by Nussbaum, and sold by Krohne and Sesemann, London, in two or three cases, with much relief to the sufferers. Where rest is impossible, the patient should learn to write with the other hand, or should have recourse to a type writer. Galvanism applied daily for a lengthy period to the cervical region of the spine, and to the nerves and muscles of the affected arm, is occasionally very beneficial. In fact, rest and galvanism are the two most important remedies for the affection. Gymnastic exercises, consisting of repeated flexion and extension of the joints of

the finger and hand, are useful. Wolff's treatment, which is a combination of gymnastics and massage, has been very successful in many cases. Hot and cold water douches, fly blisters over the tender nerves, static sparks to the cervical region of the cord and affected hand have given relief. Nervine tonics, such as strychnine, arsenic, and quinine are useful. If there is much pain, Indian hemp and anodyne liniments must be used. Sea air and salt baths are also of use.

GRAVE'S DISEASE.—See page 28.

GYMNASTIC EXERCISES are of great value in many nervous affections, as by them the nutrition of the muscles is improved, and the action of the heart is augmented. The blood is improved and through this the nervous system. In cases of paralysis the systematic exercise of the muscles is of very great value, especially in such cases as infantile paralysis, pseudo-hypertrophic paralysis, writer's cramp, and other professional spasms. Even when the paralysis is absolute, the patient should be encouraged to try constantly to move the affected muscles. Swedish gymnastics is merely a modification of ordinary gymnastics, the affected muscles being methodically exercised. The patient must be instructed to perform certain definite movements according to the actual condition he is suffering from, and the contraction of the muscles is augmented by the movements being opposed by a skilled and intelligent nurse.

HABIT CHOREA.—In this affection constant grimaces are made, and the subjects, usually children, may suffer for years. Arsenic, iron, quinine, and strychnine, but especially the former drug, are useful. All errors of refraction must be attended to. The general health must be looked after, and rest, change of air, and freedom from worry are necessary.

HÆMATOMYELIA.—Hæmorrhage into the substance of the spinal cord is of rare occurrence, and is usually the result of injury. The treatment is the same as that appropriate for hæmatorrhachis.

HÆMATORRHACHIS, OR SPINAL MENINGEAL HÆMORRHAGE.—Injury is the most common cause of hæmorrhage into the spinal membranes, but it may occur in affections in which there is a great tendency to hæmorrhage, such as scurvy and purpura. Absolute rest in bed is essential, and the patient should lie in the prone position or on one side, not on the back. An ice bag should be applied to the spine, and ergotine should be injected hypodermically, three grains every hour or two at first. Cupping may be practised over the spine and leeches applied. In robust, plethoric individuals venesection may be performed. The bowels must be kept open, and pain can be relieved by morphine injections. After the stage of re-action has passed, electricity and massage are useful. Iodide of potassium with iodide of iron and nervine tonics, such as cod-liver oil and arsenic, are indicated.

HÆMORRHAGIC PACHYMENINGITIS is often associated with dementia, but is a rare condition. Alcoholism and traumatism are recognised causes. Medicines are of little use, but counter-irritation, galvanism, and the administration of iodide of potassium may prove beneficial.

HAIR.—The hair is often affected in nervous diseases. Premature greyness is often observed in the subjects of chronic degenerative disease, especially in locomotor ataxia. Local greyness or hypertrophy of the hair is sometimes associated with neuralgia. The hair is lost over the affected parts where the skin is glossy. Cod-liver oil may be given, and wear and tear of body and mind must be checked. ALOPECIA AREATA is often associated with nervous disturbance. The administration of nervine tonics such as iron, quinine, phosphorus, and cod-liver oil, with the application of some stimulating liniment, usually brings about a cure in a few months. Chrysophanic acid ointment is a useful application.

HEADACHE (PERIODICAL), HEMICRANIA, MIGRAINE, OR SICK HEADACHE.—Is a very important form. We must prescribe treatment for the attacks, and for the prevention and recurrence of the attacks. This form of headache is met with at all ages, in childhood and old age. It usually becomes less severe as age advances, and may disappear altogether. In childhood the attacks may lead

to a suspicion of organic cerebral disease. It must be remembered that temporary ptosis and paralysis of the third nerve, hemianopsia, hemiplegia, and aphasia may occur in this affection. These conditions are temporary only. Optic atrophy may, however, follow on the side on which the headache occurs. To prevent attacks, the patient must avoid those conditions which, in his experience, produce them. In the majority of cases, however, the patient is quite unable to fix upon any particular circumstance that induces the attacks. A quiet, regular life, free from worry, out-door exercise, early hours, and plain diet are necessary. Cigar smoking undoubtedly is a potent factor in inducing attacks in men subject to the disease. Migraine does not tend to shorten life; in fact, by obliging the sufferer to be careful in his habits, it probably prolongs life; this is more especially the case in men. Indian hemp is often very useful as a preventive of the attacks. In severe cases the attacks may occur every day, and may incapacitate completely for work. A pill, containing from one quarter to one half a grain of Indian hemp, twice or three times a day, continued for a long time, not only often greatly diminishes the frequency of the attacks, but also serves to mitigate their severity. One minim doses of the one per cent. solution of nitro-glycerine, given in a similar manner, may do the same. In all cases the eyes should be examined, and any error

of refraction corrected. Hot and crowded rooms must be avoided. In the prodromal stage a purgative or emetic will often prevent an attack. A cup of tea, draughts of hot water, or a warm bath may do the same. During an attack the patient should lie down in a darkened room and should fast. Antipyrin in ten grain doses, or more, frequently repeated, if necessary, in some cases gives immediate relief; in others it is of no avail. Guarana in powder, ten to thirty grains, three times a day, often relieves. Guaranine, the active principle of this drug, identical with caffeine, can be given in from one to five grain doses. A liquid extract and a tincture of guarana are sometimes used. Citrate or hydrobromate of caffeine, in one grain doses every hour, is sometimes successful. Butyl-chloral hydrate, in five grain doses, repeated every quarter of an hour, is often useful. Amyl nitrite may be administered as an inhalation in those cases in which the face is pale during the attack. In very bad cases morphine must be given hypodermically. Counter-irritation to the head is often useful, as are also cold applications. Thirty grains of bromide of potassium, with ten drops of the tincture of Indian hemp, may often be given with advantage every four hours. If constipation is present, calomel or blue pill should be prescribed in sufficient dose, followed up with an ounce of *mist. sennæ co.* Daily galvanism has been recommended for the prevention of the attacks; it is

applied over the course of the cervical sympathetic nerve or the temples, but is of doubtful efficacy.

HEMIANÆSTHESIA may result from hæmorrhage into the posterior third of the internal capsule, or may be the result of growths, or softening abscess, in this region or in the cortex. It may also be functional. It occasionally occurs in migraine, but is then very transitory. The most common cause is hysteria, in which it may be partial or complete. If partial, sensations of pain are those which are usually lost. The mucous membrane and the special senses suffer on the affected side. The treatment will vary according to the cause. In hysterical cases the faradic brush on the dry skin with the secondary current is usually effective. Static electricity is often useful. Cutaneous faradisation of limited portions of the anæsthetic side of the body is also recommended. In severe cases the muscles and joints are anæsthetic. The anæsthesia may change from one side to the other, without apparent cause, or a transference may be induced by blisters, or by the application of discs of metal. Discs of wood or any other material serve equally well, and there is no doubt that the transference is the result of mental influences. In France hemianæsthesia is said to occur in alcoholism, and it is also said to be occasionally the result of plumbism. Hypnotic suggestion would probably cure hysterical cases. Iron, arsenic, and other nervine tonics may be given, if necessary.

HEMIANOPSIA occasionally occurs in cerebral hæmorrhage, but is usually then transitory. It occurs also as a passing phenomenon in migraine. It may be the result of intracranial growths or softening, and the treatment in each case must be directed to the cause.

HEMI-ATAXIA may follow hemiplegia, or it may be produced suddenly by embolism or hæmorrhage, the motor region of the internal capsule being irritated. Small doses of the bromides are indicated with arsenic, and in chronic cases cod-liver oil might prove beneficial.

HEPATALGIA. — Paroxysms of pain, resembling attacks of biliary colic, occasionally occur in neurotic subjects. They are supposed to be due to neuralgia of the hepatic plexus of nerves. In any given case it is far more likely that the pain is due to gall stones than to neuralgia. Belladonna, morphine, and chloride of ammonium are the most useful drugs.

HIPPUS.—Clonic spasm of the iris, the pupil alternately contracting and dilating, is often associated with nystagmus, but it may occur without any evident cause. No treatment is of any avail.

HYDROCEPHALOID CONDITION (see EXHAUSTION, page 89).

HYDROCEPHALUS, ACUTE (see TUBERCULAR MENINGITIS).—Chronic hydrocephalus is of

frequent occurrence, and may result from an intracranial tumour. It occurs sometimes in cases of congenital syphilis, and is very frequently associated with rickets. For the treatment of chronic hydrocephalus, fresh air, good nutritious food, and warm clothing are of great importance. The feeding must be carefully attended to, and cod-liver oil, and syrup of the iodide of iron are very useful. If there is the slightest suspicion of syphilis, grey powder must be given in grain doses three times a day, for a child of one year or under. Many infants' lives are lost through the non-administration of mercury in cerebral disorders. In all cases of cerebral disorder in infants, it is advisable to give that drug a fair trial. I recently saw an infant which was greatly emaciated and almost blind. There was nystagmus, but no history of rash or snuffles. I gave grain doses of grey powder thrice daily, and in six months the child was plump and could see perfectly well, the nystagmus having entirely disappeared. This child is now the picture of health, and the mother still insists on giving it the powders, which have never caused the slightest inconvenience to the child. The father, I afterwards found, had suffered from syphilis. The inunction of mercurial ointment, the 5 % oleate of mercury, or of iodide of potassium ointment, may be practised daily, the head being shaved. An elastic band worn round the head and exerting a moderate pressure has seemed to do good in some cases, or strapping may

be employed. Puncture or aspiration may be performed at the outer angle of the anterior fontanelle, the head should be bandaged and carefully supported while the fluid is being drawn, and should afterwards be strapped. Not more than an ounce should be drawn at each operation, and that very slowly. There is not much risk in the operation, but it is not often successful.

HYDROPHOBIA.—Preventive treatment is of the greatest importance. The disease might be stamped out if all dogs were muzzled, and if the owners were able to detect the early symptoms of the disease in their animals. The bitten part should be sucked at once. There is no danger in doing this if the mucous membrane of the lips and mouth is not abraded. The wound should be well washed and encouraged to bleed freely. Nitric acid or nitrate of silver may be applied, or the wound excised. In all cases it is important that the wound should be attended to at once. Pasteur has discovered that inoculation by the hypodermic injection of an emulsion of the dried spinal cord of a rabbit which has been rendered rabid by inoculation, affords protection against rabies. Pasteur believes that a course of such injections will prevent the occurrence of the disease in a person already inoculated with rabies. Pasteur's treatment has not been invariably successful, but is of very great value. When the disease has developed, the patient should be kept in bed in a

dark room. Chloral and morphine are useful. Curare has been administered in large doses in this disease until general muscular paralysis has occurred. Attention must be paid to the feeding of the patient, and peptonised nutrient enemata are necessary, or an œsophageal tube may be used. Care must be taken by the attendants not to get bitten by the patient. It may be necessary to anæsthetise the patient while food is introduced into the stomach. Indian hemp and morphine are useful for the relief of pain and to procure sleep. The duration of the disease when fully developed rarely exceeds three or four days.

HYPERÆSTHESIA may be the result of many morbid conditions. It may occur in hysteria, and then galvanism is useful. It is sometimes very distressing on the paralysed side after an attack of apoplexy. The tender and painful limbs must be wrapped in cotton wool. Anodyne liniments and galvanism may be used. Indian hemp or morphine may be necessary for the relief of pain. In alcoholic paralysis, and occasionally in other forms of neuritis, hyperæsthesia and hyperalgesia are often very prominent and distressing to the patient. The application of belladonna liniment or ointment is of use, and the local injection of cocain or morphine usually necessary. Hyperæsthesia may affect the special senses. Galvanism is then indicated.

HYPERIDROSIS may be general, unilateral, or local. It may be associated with hemicrania or tabes dorsalis, and is usually a marked symptom of exophthalmic goitre. It occurs on one side of the head and face in cases of compression of the cervical sympathetic by a growth or abscess. I have recently seen a medical man who has suffered from general hyperidrosis for several years ; often, without any apparent cause, but more commonly on any emotional excitement, his skin will blush all over his body and sweat profusely. The affection, he tells me, is in his family, all his sisters suffering in the same way. The cold sponge bath in the morning, with nervine tonics and atropine, may give relief in such cases. It is important to see that the patient has proper rest, and is not overworked and worried.

HYPERPYREXIA may occur in chronic alcoholism, chorea, tetanus, meningitis, and lesions of the pons and cervical region of the cord ; in which affections it is usually of fatal omen. It may also occur in hysteria, but is then a transitory phenomenon only, and devoid of danger. Neurotic pyrexia is a well-recognised term now, and denotes fever produced by emotional disturbances. Cold sponging and the application of the wet pack, ice, the cold bath, and the administration of anti-febrin or antipyrin are the chief remedies at our disposal.

HYPERTONY.—Muscular hypertony is occasionally met with, especially in those liable to muscular strain, such as pedestrians, and in people who have to stand for many hours together. Cramps are of common occurrence, and the gait is spastic, resembling that seen in cases of lateral sclerosis. Such cases may be distinguished from lateral sclerosis by the history of over-exertion, and by the absence of ankle clonus. Bromide of potassium and balladonna, or morphine hypodermically, will relieve the painful cramps, but absolute rest in bed is essential for cure.

HYPERTROPHIC PACHYMENINGITIS is usually the result of spinal caries. It may however, be idiopathic or result from traumatism. The application of the actual cautery and repeated counter-irritation do good. Iodide of potassium, with iodide of iron and mercurial inunction, may be tried. Recovery often follows prolonged rest. The paralysed limbs must be rubbed and passively exercised, and galvanism or faradism may be tried. **HÆMORRHAGIC PACHYMENINGITIS**, if diagnosed, may be treated in the same way as the hypertrophic form. Ergotine is indicated.

HYPNOTISM is an artificially induced somnambulism. The subject, who is often hysterical, and probably always neurotic, is directed to look at some bright object held close to, and a little above, the eyes, so as to cause strain. Charcot often hypnotises by striking a gong, but gentle

stroking, or merely suggesting to the subject that he is going to sleep, will sometimes suffice. The attention in all cases is fixed upon one object or thought, to the total exclusion of all others. Many people are hypnotised instantly ; some in half-an-hour ; in others repeated attempts are necessary, and some are quite insusceptible. English people are not nearly so susceptible as the French and Italians, and it is not probable that hypnotism will ever be much employed in this country. In the hypnotic state the higher mental functions are abolished, and the acts of the subject are entirely automatic, being determined by the suggestions of the operator. Suggestions can be made which shall take effect after waking. This is called post-hypnotic suggestion, and is largely used abroad in the treatment of functional nervous diseases. It has been of service in the treatment of the alcohol, cocain, and opium habits; also in hysteria, insomnia, and neuralgia.

HYPOCHONDRIASIS.—Any disturbance of general health must be corrected. Travelling with cheerful companions and employment may do good. If there is much mental depression *cannabis indica* may be given internally.

HYSTERIA.—A judicious training in early life, and occupation in later life, are the great preventives of hysteria. It is generally the rule, that the cause of hysteria lies in the parents. A

fond and too indulgent mother engenders hysteria in her daughters, which would have been prevented by judicious firmness. In all cases moral treatment is of great importance, and in severe and obstinate cases seclusion from friends and removal from home are necessary. The Weir Mitchell treatment is very efficacious in severe cases of hysteria. No two cases of hysteria are exactly alike, and the treatment must be varied according to the exigencies of each case. In all cases the general health requires attention, and anæmia or constipation, if present, must be relieved. If any ovarian or uterine disease really exists, it should be attended to. Shower baths, fresh air, and exercise are necessary. Beard recommends general faradisation. Cold affusion, faradism, emetics, such as sulphate of zinc or apomorphine, are all useful. An enema of asafœtida sometimes succeeds in arresting an attack. Dr. Hare recommends that the mouth and nose should be held closed until the patient is restored to her senses. In hysterical globus, galvanism is useful; in hysterical vomiting, seclusion is usually necessary. In paralysis, powerful faradism is often successful. Hysterical tympanites may be cured by powerful faradisation of the abdominal muscles. Anæsthesia calls for the faradic brush. Headache or clavus is relieved by antipyrin or caffein. Contracture may be reduced under an anæsthetic; sparks from a static machine, galvanism, and massage are useful. In all cases

the patient should be firmly dealt with and should be assured that she will soon get well. Nervine tonics, the bromides and antispasmodics, such as valerian, asafoetida, musk, sumbul, and galvanism, are often of service. Some cases of hysteria are inveterate and incurable. Such patients will mutilate themselves, and submit to amputation of their limbs and other serious operations, rendered necessary by self-inflicted injuries. Even in the worst cases, great improvement is effected by removing the patient from her friends and home surroundings. Many girls and women are at the present time leading idle, useless lives in bed, because their friends will not allow them to be moved from their homes. I recently saw a young girl who had been in bed for five years, being, she said, too weak to get up. Her friends were, with difficulty, persuaded to allow her to be moved to the hospital. After a six weeks' residence in hospital she was able to be up all day, and could walk perfectly well.

HYSTERO-EPILEPSY is occasionally, though comparatively rarely, seen in this country. Inhalations of amyl-nitrite may be employed for the suppression of an attack. Nitro-glycerine might be tried. Apomorphine may be hypodermically injected.

IMPOTENCY.—In all cases of impotence occurring in young or middle aged men, early locomotor ataxy should be suspected, and the

condition of the knee reflex should be enquired into. Impotency may result, however, from neurasthenia and mental depression, apart from actual structural disease of the cord. Lesions of the lumbar region of the spinal cord, such as myelitis or growths, usually cause complete impotence, together with paralysis of the bladder. General faradisation and the local use of galvanism, the anode being placed over the lumbar region of the cord, and the cathode passed over the spermatic cord, penis and testes, are very useful measures. Strychnine, phosphorus, iron, and cantharides are of service in cases of impotence. In locomotor ataxy, suspension has in some cases restored sexual power. Impotence has been known to follow an attack of apoplexy, but this is rarely the case.

INCONTINENCE OF URINE may result from overflow, the result of distension. In all cases the bladder must be examined. If distension is present, the catheter must be used several times a day, and the bladder washed out daily. Such incontinence may be the first symptom observed in locomotor ataxy, and it may be entirely cured by the above means. Incontinence may also result from a weakness of the sphincter muscles; this form is commonly met with in women, the act of coughing or any effort causing a dribbling of urine. Such cases are usually at once relieved by drop doses of tincture of cantharides. This form

of incontinence may also occur in locomotor ataxy, Friedreich's disease, and other affections of the spinal cord. It is usually cured or benefited by the suspension treatment. (Strychnine is the best drug.) Enuresis, or nocturnal incontinence of urine, requires a very careful investigation if the treatment is to be successful. In all cases the condition of the prepuce, urethra, and rectum should be enquired into. Worms, if present, must be got rid of. Constipation and an over-acid state of the urine are occasional causes. The quantity of drink consumed towards the end of the day must be restricted, and the child should be taken up late at night and early in the morning to pass water. In some cases the bladder is small and contracted, and unable to contain much urine. In these cases it is necessary to distend the bladder by the injection of water while the patient is under chloroform. The treatment must be varied according to the morbid conditions found to be present. A nocturnal dose of the bromides with belladonna is often successful, or belladonna alone if pushed sufficiently. Chloral is also very useful. Other cases require ergot, strychnine, iron, and phosphoric acid. The general health must be attended to, and the daily cold or tepid bath is of great value. Enuresis may occur in the day time as well as at night, and is then more intractable. Incontinence of fæces may also occur. Usually in these cases there is some degree of imbecility present.

INSANITY.—In dealing with insanity, early treatment is of the utmost importance. In all cases an early removal from home surroundings and familiar faces is necessary; and many cases recover on being sent away to travel among fresh scenes and faces, with a trustworthy attendant. Of course, no case in which there is a suicidal or homicidal tendency should be allowed to travel, and in no case should a patient be allowed to go away by himself. It is of great importance that suitable cases should be removed to an asylum as soon as possible. Out-door exercise, amusements, good and abundant food are the chief remedies. Drugs are of use to procure sleep, and in conditions of excitement, chloral, digitalis, the bromides, hyoscyamin, paraldehyde, and chloral-amide are the chief narcotics employed. In cases where depression is marked, small doses of opium and Indian hemp seem to give relief.

INSOMNIA results from many causes, which must be sought for and removed in each individual case. The insomnia from pain calls for morphine, no hypnotic being so efficacious as this drug when pain is present. When associated with heart disease, it is also often greatly relieved by a small morphine injection. Dyspepsia, constipation and cough are all causes of insomnia, and must be appropriately treated if present. Insomnia very commonly affects over-worked and worried men, when it is not so much brain work as the emotional

disturbance which sometimes accompanies it that is the cause of the insomnia. In acute cases of psychical insomnia, the bromides, chloral, and Indian hemp may be administered at bedtime, and may often be combined with advantage. Chloralamide is the safest and most reliable of the hypnotics recently introduced. It is especially useful in insomnia from nervous excitement and worry. It does not affect the heart or respiration, nor has it any disagreeable after effects. It causes sleep in about half-an-hour, and the sleep is usually sound and prolonged for several hours. It is valuable in cases of senile insomnia, and is the best hypnotic for cases of heart disease. The dose is thirty grains for a woman, forty to fifty for a man, and should be given in a little warm claret and water just before bedtime. It may be given in the form of an enema. Sulphonal is very uncertain in its effects, and often causes a disagreeable drowsiness for the whole of the day following its administration, together with vertigo, and occasionally ataxia. Paraldehyde and urethane are safe, but are uncertain in their action as hypnotics. Chloralamide is not a specific for insomnia; each case must be separately studied, and in no case should a patient be encouraged to take drugs habitually. It is only for occasional and acute insomnia that the drugs above mentioned are especially valuable. In all chronic cases of insomnia from worry, change of air, travelling, out-door exercise, a sea voyage, and

the correction of faulty habits are necessary to effect a cure. In many cases the excessive use of tobacco, alcohol, tea or coffee is responsible for insomnia, which is at once cured by a discontinuance of the faulty habit. In cases where the blood pressure is too high, as in gout and in Bright's disease, insomnia is very persistent. Saline purgatives, and a proper limitation of the diet, often suffice for a cure. If anæmia is present, iron must be prescribed. Old people often sleep badly, and are usually very early risers; this is because they have not the power of sleeping, probably from a degeneration of their cerebral arteries. It is important that the chief meal of the day should not be taken late in the evening by elderly people, a cup of warm milk just before retiring to bed, and a light supper two hours previously, often being effectual in the restoration of sleep. Many a case of apoplexy has resulted from a heavy late supper with copious libation. The wet pack is often very efficacious in cases of acute insomnia. Hyoscyamin is a powerful remedy for insomnia, and so, too, is chloral, but the habitual use of these drugs is to be strongly deprecated. Outdoor exercise in the evening to produce a degree of fatigue, and in all cases amusement and recreation before going to bed, greatly favour sleep. Massage, the wet pack, and warm baths are often employed with advantage.

INTERMITTENT FEVER.—Many nervous affections are caused by ague. Neuralgia, especially of the ophthalmic nerve, sciatica, attacks of transient aphasia, temporary and intermittent paralysis of one or more limbs, paraplegia, optic neuritis and peripheral neuritis, are all occasionally met with. People who have been abroad and have had ague there are always liable, after their return home, to attacks on exposure to cold and wet. Arsenic, quinine, iron and strychnine are the drugs to be used. Electricity, massage, warm clothing, and a careful avoidance of exposure to cold, are necessary.

INTRACRANIAL ANEURISM.—Nothing can be done for the cure of the miliary aneurisms which are of such common occurrence in the cerebral arteries of old people, but much may be done in the way of prevention of their rupture and resulting apoplexy. (See APOPLEXY.) Aneurism of the cerebral arteries is more common in early life than is aneurism elsewhere, and this is explained by its frequently resulting from embolism following rheumatic endocarditis. Injuries to the head and syphilis are also causes. If the aneurism can be diagnosed, the proper treatment is by rest, iodide of potassium, and low diet. If the aneurism can be recognised with certainty to be on the middle cerebral artery, ligature of the common carotid would be indicated.

IRIDOPLEGIA.—In this condition both the muscles of the iris are paralysed, the pupil reflex to light and reflex dilatation on cutaneous stimulation are both paralysed, but the pupil usually contracts on convergence. It may be due to diphtheria, and is then transitory, or it may result from central disease caused by syphilis or occurring in the course of locomotor ataxia, multiple sclerosis, and general paralysis of the insane. If there is any history of syphilis, the administration of iodide of potassium must be pushed, and mercury should also be given.

IRRITABLE TESTIS.—NEURALGIA SPERMATICA.—In this affection there are violent paroxysms of pain radiating along the spermatic cord, down the inner side of the thigh, and into the testicle. The affection usually occurs in young men, and is generally unilateral, the testicle being very tender to pressure, and vomiting occurring in severe paroxysms. Morphine hypodermically may be necessary. Arsenic and quinine may be given, and galvanism through the lumbar region of the cord should be tried.

IRRITATION, SPINAL.—This is often a very troublesome affection which occurs in young, neurotic, or hysterical women. There is usually considerable motor weakness and various pains, but the essential feature in the disease is the presence of exquisite spinal tenderness. The tenderness may be limited to one spinous process, and severe

pain is elicited by even a slight pressure. The patient may be unaware of the existence of the tenderness. The cause must be searched for, and removed if possible. Any uterine or ovarian mischief or anæmia must be corrected. Change of air and removal from home surroundings, with freedom from work and worry, are beneficial. External remedies are of great importance. In severe cases the application of the actual cautery sometimes cures. The local injection of morphine or atropine, the application of ice or hot water bags, or the local inunction of veratria and aconite, are all of value. Internally, arsenic, quinine, zinc, iron, opium in small doses, or Indian hemp may be tried. In all cases a good, nutritious diet, with a moderate amount of alcohol, is needed. Turkish baths, massage, and galvanism are valuable remedies. If these measures fail, absolute rest in bed on the back is necessary, along with the Weir Mitchell treatment. When galvanism is employed, the cathode must be placed over the painful vertebræ, and the application made daily for at least ten minutes. General faradisation is useful.

JACKSONIAN EPILEPSY.—This variety of epilepsy, the pathology of which was first discovered by Hughlings Jackson, is due to irritative lesions of the cerebral cortex. The part first convulsed, "the signal symptom," points to the motor centre of that part as the seat of greatest

irritation. This form of convulsion is distinguished from ordinary epilepsy by the fact that the convulsion always begins in one limb or part of a limb, though it may, later on, spread and become general. There is no loss of consciousness, as a rule, and the convulsive movements are succeeded by paralysis, an aura being nearly always present. It is this form of epilepsy that is amenable to the operation of trephining. Not only have we various forms of motor Jacksonian epilepsy, according to the motor areas diseased, but sensory Jacksonian epilepsy may also be recognised. The centres for sight, hearing, taste, and smell may be the seats of disease, and paroxysmal disturbance of these functions may occur, having a localising value quite as great as localised convulsions. Syphilis is by far the most frequent cause of Jacksonian epilepsy, tubercle perhaps coming next. Depressed fractures, local hæmorrhage, meningitis, growths and softening may also be causes. In some cases where trephining has been performed, no visible lesion has been discovered, yet recovery has followed the operation. Hughlings Jackson recommended that in these cases the centre implicated should be excised. In all cases of local epilepsy antisyphilitic treatment should be tried, and if this fail, the bromide and zinc salts should be administered. If after six or seven weeks' treatment the attacks are not affected, or are increasing in frequency, then trephining should be

performed. No case of Jacksonian epilepsy ought to be allowed to drop out of sight. A patient who had been under my care, complaining of an aura that always began in the left knee, and was then followed by convulsion, left off attending the out-patient clinic, and reappeared four years later, but was then quite blind. In all cases where optic neuritis is present and the disease does not yield to energetic antisyphilitic treatment, trephining ought to be performed.

JACTITATION occurs in severe febrile disorders and in nervous affections. It is sometimes markedly present in pericarditis, and occurs also after severe losses of blood. The treatment must be directed to the cause: bromides and chloral are indicated.

JOINTS.—Neuralgia and contracture of the joints occur in hysterical subjects; the hip and knee being the joints most commonly affected. As a rule the diagnosis is not difficult, for there is a marked disproportion between the local symptoms and the general symptoms, the former being very intense, while the latter are absent or slight. Superficial pressure causes more pain than deep, and the pains shift and alter unaccountably. There is no fever, and nocturnal startings do not occur. Methodical exercises, not rest, are indicated. The patient must be made to get about. The faradic current is often of great service. Asafœtida, iron, and quinine are to be given as indicated.

LANDRY'S PARALYSIS.—ACUTE ASCENDING PARALYSIS.—This is a very rare disease, the pathology of which is not yet fully known, and which has been chiefly described by Landry and Kussmaul. Exposure to cold seems to have been the most frequent exciting cause. The disease much resembles acute ascending myelitis, but is distinguished from it by the absence of anæsthesia and of paralysis of the bladder or rectum, and also by the absence of bed sores and other trophic disturbances, and of electrical changes. The treatment is that for acute myelitis. The prognosis is very grave, but some few cases recover, though usually death results in from eight to twelve days. If any history of syphilis can be obtained, iodide of potassium must be freely tried, together with mercurial inunction. In other cases, the patient must be kept in bed absolutely at rest, and lying either in the prone position or on one side. A vapour bath may be given once or twice a day, especially in those cases where the affection has supervened after exposure to cold. Chapman's ice bag may be applied to the spine, or strips of mustard plaster may be used along the whole length of the spinal column. Ergot and belladonna may be given in full doses. Ergotin in two or three grain doses, frequently repeated, has proved useful. Salicylate of sodium has also been used with apparent benefit. Dry or wet cupping over

the spine, or leeches, may be tried. The disease is most common in middle-aged male subjects. If it does not prove fatal, the use of galvanism with iron and quinine hastens the recovery.

LARYNGEAL CRISES.—In the course of locomotor ataxy laryngeal crises may occur. They may be attended with paroxysms of spasmodic cough, resembling whooping cough, or there may be continuous laryngeal spasm and inspiratory stridor. In some cases there is loss of consciousness, and the symptoms are very urgent. Inhalation of nitrite of amyl or morphine hypodermically usually relieve these attacks, but they may prove fatal. Paralysis of the abductor muscles of the glottis may also occur in locomotor ataxy, and tracheotomy may be necessary.

LARYNGEAL PARALYSIS may be due to lead or arsenical poisoning, or it may follow diphtheria. Organic disease of the nuclear cells in the medulla of the spinal accessory nerve is the cause of the laryngeal paralysis that occurs in glosso-labio-laryngeal palsy, multiple sclerosis, and occasionally in general paralysis and locomotor ataxy. Pressure on one of the recurrent laryngeal nerves is a common cause of paralysis, which is usually one-sided, but in rare cases, pressure on one of the recurrent nerves has caused a bilateral paralysis of the vocal cords. Intra-thoracic aneurism, enlarged glands, chronic lung disease, and growths of the thyroid body, or œsophagus,

are among the chief causes of pressure on this nerve. The abductor muscles suffer more than the adductor. In hysterical cases the paralysis is always bilateral, unilateral paralysis being always indicative of organic disease. In hysteria, the arytaenoideus is the muscle most often paralysed, then the adductors, and very rarely the abductors. The treatment of laryngeal paralysis must be directed to the cause. Lead and arsenical paralysis are to be treated with iodide of potassium, and diphtheritic paralysis with strychnine. In all cases, galvanism or faradism may be applied, and one electrode may be introduced into the larynx with the aid of the laryngoscope. Great care must be taken not to injure the larynx when the intralaryngeal application is attempted. In hysteria, faradisation is of great service, together with the usual moral treatment. In central disease, nervine tonics, such as arsenic, iron and quinine, may be given, and galvanism used, but such cases are very unfavourable and rarely, if ever, yield to treatment. In syphilitic cases, the usual remedies must be employed. Fly blisters are very useful in diphtheritic paralysis, as are also stimulating liniments, in both this disease and hysteria. Strychnine, in doses of one sixtieth of a grain, may be injected locally with benefit. If scrofulous glands are present, cod-liver oil, iodide of iron, and chloride of calcium are indicated, and much benefit is derived from a residence at the sea-side.

Anæsthesia of the larynx is produced by lesions of the superior laryngeal nerve. It is met with in hysteria and also after diphtheria, and is to be treated by the remedies above indicated.

LATE RIGIDITY is due to descending degeneration of the pyramidal tracts. The rigidity is more or less constant, but diminishes during sleep, and is increased by voluntary efforts and emotional disturbance. The rigidity may be diminished if the disease spreads to the motor cells in the anterior cornu. Warmth, passive movement, massage, and faradisation of the exterior muscles are useful in diminishing contracture. In time tissue changes take place in the shortened muscles leading to "structural rigidity."

LATERAL SCLEROSIS.—Any lesion which separates the pyramidal tracts from their trophic centres, the nerve cells in the central convolutions of the brain, is followed by descending degeneration and sclerosis, so that lateral sclerosis occurs in cases of hæmorrhage into the internal capsule, or from vascular occlusion leading to softening of this region or of the convolutions themselves. Descending degeneration also occurs bilaterally after myelitis, or from compression of the cord. It may, however, occur as a primary system disease of the cord. The treatment will depend upon the cause. In all cases the spine must be examined, for spinal caries is a common cause of paraplegic rigidity. After myelitis, the continued administration of

small doses of iodide of potassium and belladonna does good, and I have seen perfect recovery follow after a paraplegia has lasted even three years. Galvanism may be applied daily to the spinal cord and limbs, but the currents must be mild. Faradism is harmful in all these cases where there is spasm. Rest is most important, and in all cases the patient must be cautioned against over-exertion. Massage is of service in diminishing the rigidity and relieving cramps, but morphine may be necessary. Small doses of the bromides with belladonna are also useful for this purpose. Care must be taken against exposure to cold and wet, and the habits must be regulated, any excess in alcohol or sexual intercourse being very deleterious. Morphine hypodermically is necessary where severe cramps occur. Primary lateral sclerosis or spastic paraplegia is a very rare primary system disease of the cord. Injuries, syphilis, exposure, and sexual excess are the most common causes. The disease may appear a long time after the receipt of the injury. Both locomotor ataxy and lateral sclerosis may be the result of injuries to the spine, and may not commence for some months, or even years, later. This is important in connection with injuries occasioned by railway accidents. A course of Turkish baths and hydropathic treatment, thermal and saline baths, are of great use. Massage relieves rigidity. Rest is very beneficial, and absolute rest in bed is advisable in an early stage.

Kussmaul has reported a cure, the patient taking chloride of gold in doses of one-third of a grain three times a day. Erb recommends nitrate of silver and hydropathy. Bromide of ammonium or sodium, conium, atropine, or hyoscyamin are useful in diminishing trepidation. The actual cautery applied along the spine on either side sometimes does good, while static electricity has been highly recommended for the relief of contracture and spasm. Arsenic and calabar bean are very useful drugs, but strychnine is harmful. Cod-liver oil may be given with advantage, but not in people already stout. An increase in the weight of the patient is distinctly harmful, especially if he is obliged to get about. For the treatment of congenital spastic paraplegia, see BIRTH PALSY. Cases of lateral sclerosis are often mistaken for hysterical paraplegia, but in the latter the contracture and spasm do not vary with posture, and there is rarely true ankle clonus. Suspension has been tried for lateral sclerosis, but with little or no benefit. In all cases a minimum of walking exercise must be allowed, but the patient must take carriage exercise daily.

LAUGHING OR CRYING FITS occur occasionally in hysteria, and are forms of expiratory spasm. Faradisation and the internal administration of antispasmodics usually suffice.

LEAD-POISONING.—This is a common cause of paralysis and other disorders of the

nervous system. Anæmia is a more constant sign of lead-poisoning than is the blue line on the gums. It is important to remember that convulsions, drop wrist, and amblyopia, in fact, any of the nervous symptoms of lead-poisoning, may occur without the production of the blue line on the gums. I have seen severe epileptiform attacks in a gentleman engaged in the office of an enamel manufactory, in whom there was no blue line on the gums, probably because of his cleanly habits as regarded his teeth. The fits at once ceased on his leaving the works. In all cases the occupation of a patient should be enquired into, and if any lead is used by him, it will in all probability account for any nervous symptoms that may be present. I recently saw an artist who in a few weeks had become nearly blind; there were no changes in the disc or retina, and no blue line on the gums, but I found that he handled white lead in his work. Lead poisoning may produce optic neuritis, which may be followed by optic atrophy and blindness. Headache and vomiting may be present, and the case may simulate one of cerebral tumour. Lead paralysis is well known. It usually attacks the extensor muscles of the wrist, is bilateral, and often supervenes suddenly. The supinator longus usually escapes, and the reaction of degeneration is present. In rare cases the deltoid, biceps, and brachialis anticus may be affected. The small muscles of the hand are usually atrophied. The leg

muscles may also be paralysed, and the feet may be dropped. In these cases the tibialis anticus may escape. Hemiplegia and hemianæsthesia may occur, and patches of anæsthesia about the limbs are often present. Neuralgia of various nerves, cramps, laryngeal paralysis, and fever also occasionally occur. Lead tremor is much rarer than lead paralysis. I have seen two cases where the tremor was marked and general. In some cases the facial muscles and tongue are especially affected, and mental symptoms may be present. These cases may be mistaken for general paralysis of the insane. Lead encephalopathy is very serious and often fatal. Convulsions, delirium, somnolence, and coma may occur. In some cases acute mania occurs, in others profound dementia. Cerebral apoplexy may occur, but is usually secondary to chronic nephritis, produced by lead-poisoning. Gout is a common result, as are fibrillary twitchings and atrophy in the muscles of those suffering from plumbism. In acute lead-poisoning emetics of sulphate of zinc must be administered. The alkaline sulphates and sulphate of magnesium are of great service. I have frequently seen a marked blue line on the gums follow the administration of the lead and opium pill of the pharmacopœia after about half-a-dozen pills have been given. In these cases the blue line has disappeared in about two months. In the treatment of chronic lead-poisoning, prophylaxis is of great importance. Cleanli-

ness is essential, the hands, nails, and teeth must be frequently washed, and the former always immediately before eating. Free ventilation of the work rooms is of great importance, and if there is much dust a flannel respirator must be worn. A special suit should be worn for work. Milk is an excellent prophylactic, as it is also against brassfounder's disease. A sulphuric acid lemonade is useful, and occasional doses of Epsom salts and sulphuric acid should be taken. The more recent the case the better is the prognosis of complete recovery. Lead colic must be treated by the hypodermic injection of morphine, and the use of Epsom salts and other aperients with sulphuric acid. The pain usually subsides when the bowels are opened. Iodide of potassium should not be given at once in acute cases; it may, by bringing more lead into the system, increase the toxic effects, and may even cause death in this way. It is of great importance to clear the alimentary canal of lead by purgatives, especially the alkaline sulphates. When the pain is relieved, iodide of potassium must be combined with the Epsom salts. If there is much anæmia, a scaly preparation of iron may be added. Iodide of potassium, in five grain doses, three times a day, greatly promotes the elimination of lead from the system, as shown by the detection of increased quantities of lead in the urine. In the treatment of lead paralysis, strychnine injected locally is of use, but iodide of potassium must be given along

with iron, and the bowels kept open. Massage and electricity are of great service. If the faradic excitability is lost, then galvanism must be applied daily; but, if it is retained, then the faradic current may be employed. Lead encephalopathy is to be treated by the drugs above mentioned, but it is a very serious and often an incurable condition. Diaphoretics are said to be useful in the treatment of plumbism, but little lead can be eliminated in this way.

LEPTOMENINGITIS.—Inflammation of the pia and arachnoid membranes in antithesis to pachymeningitis or inflammation of the dura.—See MENINGITIS.

LETHARGY, OR TRANCE.—In this condition the patient lies as if dead, circulation and respiration almost cease, and she cannot be roused, or only imperfectly. The condition occurs in hysterical or neurotic subjects, especially after exhausting illnesses, such as typhoid fever. I have seen a case which followed a severe attack of influenza. In some cases the subjects respond to suggestions, the condition exactly resembling that produced by hypnotism. The condition may be distinguished from death by the presence of the electrical excitability of the muscles, which is lost within three hours of actual death. The condition may last for many weeks, but usually ends favourably. The patient should be in charge of trained nurses and separated from friends.

Nutrient enemata must be given, or she must be fed with a tube. Care should be taken that bed sores do not form, and warmth is essential. Cutaneous faradisation is the most powerful agent for inducing a return to consciousness, and may be frequently applied if necessary. Ether, valerian, asafoetida, and strong coffee, given in enemata, are often of use.

LIGHTNING PAINS.—These occur in locomotor ataxy, and also in compression myelitis. They occur also to a less degree in spinal irritation and neurasthenia. The treatment must depend upon the cause. Antipyrin relieves the pains of locomotor ataxy. Suspension is necessary in cases of spinal caries. Morphine hypodermically is always efficacious.

LINGUAL SPASM.—May occur as a form of Jacksonian epilepsy in irritative lesions of the cortical centre for the movements of the tongue. In these cases iodide of potassium and counter-irritation of the scalp may prove useful, together with the bromides. Spasm of the tongue occurs also in chorea, epilepsy, eclampsia and hysteria, the treatment being that for the disease present. Tremor of the tongue is an important symptom of general paralytic dementia. It is often produced by alcoholism and lead-poisoning, and may be present in cases of progressive muscular atrophy and multiple sclerosis.

LOCAL ASPHYXIA.—RAYNAUD'S DISEASE (see ASPHYXIA).

LOCKJAW (see TETANUS).

LOCOMOTOR ATAXY.—The treatment of locomotor ataxy by suspension is of quite recent date, and sufficient time has not yet elapsed to enable us to judge of its full value. We owe this treatment to Dr. Motchowkowski, of Odessa, who published a paper on the subject in 1883. A translation of Dr. Motchowkowski's paper is contained in "Brain," Vol. XLVII., October, 1889. The author was led to adopt the treatment by observing that, in a patient with tabes and angular curvature, the suspensions necessary for the application of the plaster jackets caused a great improvement in the ataxic symptoms. He then treated twelve cases of locomotor ataxy with suspension only, and they were all benefited. Charcot adopted the treatment at Salpêtrière, and met with considerable success. The apparatus employed is similar to the ordinary Sayre's apparatus, but it is better to have the instrument fastened to a hook in the ceiling and not to use the tripod, which might easily be upset by an ataxic patient. The patient must not be allowed to swing about or to twist round. The suspension must always be performed by, or in the presence of, a medical man. Two fatal cases have been recorded, and in each the patient was administering suspension to himself. In all cases the heart should be

examined previously, for aortic regurgitation is prevalent among tabetics, and would contra-indicate suspension. The duration of the suspension should not exceed half-a-minute at first, and the application should only be made every other day. Later on, if it is borne well, the time may be increased to two minutes, but rarely for longer, and the application must be made daily. Should giddiness, headache, pain, discomfort or fatigue be caused, the patient must be gradually, but at once, let down. The patient may occasionally lift up his arms, so as to bring the force of his weight more directly on the spinal column. Care must be taken that the arm-pieces and head-piece fit easily. Dr. Motchowkowski considers that the following conditions contra-indicate suspension, viz., heart disease, sclerosis, and aneurism of the arteries, marked emphysema of the lungs, cavities in the lungs, a liability to hæmoptysis, previous epileptiform or apoplectiform attacks, and profound anæmia or a tendency to syncope. Charcot states that suspension causes a marked improvement in the incoördination, pains, vesical troubles, paræsthesia, impotence, and insomnia of locomotor ataxia. The improvement at first lasts only for an hour or two, but is more permanent after a prolonged treatment. The degree of improvement, indeed, seems to have been determined by the length of the treatment. The Argyll-Robertson condition of the pupil is said to have been removed by the suspension

treatment; but lost knee jerk does not seem to have been recovered, nor has any instance of actual cure been reported. Nevertheless, suspension is a most useful supplement to our armamentarium in the treatment of this dreadful disease, but it is not a specific, and it fails utterly in many cases. We do not know how it acts, but it is probable that it stretches the meninges and nerve roots, and, by breaking down adhesions, improves the blood supply. It seems of most use in chronic lesions of the cord, and is dangerous in recent cases. Suspension has been tried in other affections of the spinal cord, and it has proved very useful in cases of peripheral neuritis, more especially of the sciatic nerves. In two of my own cases of Friedrich's ataxia it failed to give any relief, except as regards the incontinence of urine present in one of them, which was cured; but it is said to have relieved the ataxia, and is certainly worth trying. In a case of chronic myelitis with descending sclerosis, under my care recently at the Workhouse Infirmary, a great improvement in power and a diminution of rigidity followed a prolonged course of suspensions. One tabetic patient, who suffered much with headache, stated that suspension invariably removed it. Suspension may be used with benefit in cases of impotence from neurasthenia. It seems to be useless in cases of multiple and lateral sclerosis. More can be done with drugs in an early than in a late stage of tabes. In about

two thirds of the cases a distinct history of syphilitic infection is obtainable, but where the disease has supervened gradually some years after syphilitic infection, it is rarely benefited by this line of treatment. In exceptional cases, however, the symptoms yield to this treatment, and therefore it is advisable to try the effect of full doses of iodide of potassium with mercury as soon as possible. The subjects of this disease must carefully avoid exposure to cold and wet, and any sexual or alcoholic excess takes away all chance of recovery. Sexual intercourse is decidedly harmful, and hastens the onset or increases the progress of optic atrophy. A warm climate is beneficial. Constipation is a trouble in most cases, and when very obstinate, faradisation of the abdomen along with massage is useful. Rest of mind and body is necessary, and all cases of worry must, as far as possible, be removed. Over-exertion is distinctly harmful, therefore carriage exercise may be freely taken, but much walking must be avoided. Complete rest in bed for some weeks often causes a great improvement in the ataxy and pains. Crutches may be used to prevent excessive muscular effort. In all cases plenty of good food is necessary, with cod-liver oil. Many patients become too stout or gouty from the want of exercise, and these conditions must be avoided by appropriate dieting. All tabetics should wear flannel next the skin, and have warm clothing. Mountain and sea air do

good. The cold water cure properly carried out in hydropathic establishments occasionally does much good. The morning cold sponge bath must be recommended, and a course of Turkish baths is beneficial. Arsenic, nitrate, and phosphate of silver, iron, quinine, strychnine, calabar bean, and ergot are the chief drugs recommended for the disease, and they are here enumerated in the order of their probable utility. Phosphorus has not seemed to be of much use in the cases in which I have prescribed it, while under the influence of arsenic I have seen the lost knee jerks reappear with great amelioration of all the symptoms. Belladonna is useful when bladder troubles are present, such as nocturnal incontinence, but strychnine is more useful when there is paralysis of the bladder. In all cases it is of the utmost importance to use the catheter if necessary, and to wash out the bladder. In some cases the detrusor vesicæ is absolutely paralysed, and the patient has to pass a catheter several times a day. Galvanism may be tried, one electrode being introduced into the bladder, the other being placed over the lumbar and sacral regions of the spine, or over the pubes. In the early stages of the disease, ergot in large doses has been recommended by some authors, but it is of very doubtful efficacy, and might prove harmful. Galvanisation or faradisation of the spinal cord and limbs has little or no good effect. Phosphate of silver in doses of

one-third of a grain, two or three times a day, may be given, sometimes with great benefit. This salt is preferred by some practitioners to the nitrate. If the silver salts are given, care must be taken to avoid any staining of the skin, and the drug must not be used continuously for more than a month at a time. The actual cautery to the spine and static sparks have caused an amelioration in some cases, more especially when the symptoms have been recent and somewhat acute. For the lancinating pains morphine hypodermically is necessary in severe cases, but usually antipyrin in ten grain doses, salicylate of sodium, phenacetin, or exalgine succeed. Atropine may be injected locally instead of morphine. Warm baths, and especially the sulphur bath, are also of use for the relief of the pains. Blisters to the spine and suspension also relieve them. Indian hemp in doses of one quarter or one third of a grain every two hours is usually efficacious. Visceral crises, if severe, can only be relieved by the hypodermic injection of morphine. Perforating ulcers usually heal if the patient is kept in bed, but break down again when he walks about. They must be protected by appropriate plasters. A tabetic patient should be very careful not to injure his feet, nor to wear tight boots, nor to cut his corns. Langenbuch, in 1879, introduced nerve stretching, especially of the sciatic nerves, for the relief of the pains of this disease. The operation has been successful in some cases, but usually only

for a short time, a relapse soon taking place. The procedure is not free from danger, and is passing out of use, at any rate in locomotor ataxy. The prognosis of tabes is very unfavourable, and, except in early stages, little benefit is derived from drugs. Suspension is not a specific, and has never yet cured a case, though it seems to have benefited many. The apoplectiform attacks, which occur in the course of the disease, and which may prove fatal, are best treated by counter-irritation by a mustard plaster applied to the nape of the neck. Epileptiform attacks are to be treated with the bromides. In some cases of tabes, especially where there has been much mental strain, I have met with severe and persistent headache, This is relieved by antipyrin, in combination with small doses of bromide of ammonium and Indian hemp. Ataxic patients must be careful to avoid, if possible, any liability to injury, there being a predisposition to joint disease and fracture of the bones.

LYSOPHOBIA, OR PSEUDO-HYDROPHOBIA.—This condition may be produced in neurotic or hysterical subjects by the influence of fear. There may be dysphagia, but there is no real respiratory spasm. The period of incubation and the duration of true hydrophobia must be borne in mind. True hydrophobia is fatal in two or three days. The patient may be tranquillised by being assured that the symptoms are not due to that disease. The bromides are indicated.

MARANTIC THROMBOSIS.—Thrombosis of the cerebral sinuses, especially of the superior longitudinal, is apt to follow on the wasting diseases of infants, especially chronic diarrhoea. The strength of the patient should be maintained by good feeding, stimulants, and bark, and the cause of the prostration must be removed. Warmth and absolute rest in bed are essential. The prognosis is extremely grave, and few cases recover. No depleting treatment must be attempted.

MASKED EPILEPSY.—This term is applied to attacks of epilepsy in which automatic actions take the place of ordinary seizures; but in the majority of cases the automatic actions do not replace, but merely follow, a temporary loss of consciousness, and are really post-epileptic states. For treatment, see **EPILEPSY**.

MASSAGE is a scientific application of methodical rubbing and manipulation of the muscles. A knowledge of anatomy is essential for its proper performance, as individual muscles must be picked out. It is a very successful remedy in many cases of organic and functional paralysis. By it inflammatory and effete products are reabsorbed, and the blood and lymph streams accelerated. The movements are always directed upwards in the direction of the venous currents. Massage increases the appetite and tissue change; it causes an increase in body weight, as well as in

the depth and frequency of the respirations, and raises the temperature of the limb operated upon. It exercises a great restorative influence upon fatigued muscles, and is an essential factor of the Weir Mitchell treatment, counteracting the evil effects of prolonged rest and over-feeding. The duration of the séance should rarely exceed a quarter of an hour, and the prevalent idea that it should last an hour is quite wrong. Patients expect to be rubbed for a given time, and imagine that the longer the sitting the better the results, and the more they get for their money. Massage should not be prescribed when there is much arterial degeneration, nor in cardiac disease. It is contra-indicated also in cases of aneurism, in thrombosis of veins, gastric ulcer, and phthisis. It has been recommended for gall-stones, but in these cases it must be performed gently and with care. I have seen gall-stones passed in the fæces after its employment. It is, of course, only of use when the gall-stones are small. Massage is very useful in sciatica, lumbago, myalgia, and in peripheral neuritis. In infantile paralysis it is essential and often causes great improvement. It is of service also in spinal irritation, hysterical paralysis, neurasthenia, pseudo-hypertrophic paralysis, progressive muscular atrophy, and facial palsy. It is said to be very beneficial in insomnia, constipation, and writer's cramp. Massage of the eyeball, after embolism of the central artery of the retina, has

restored sight by dislodging the embolon. There are several methods of procedure in massage. Effleurage consists in stroking the limb in an upward direction with the palm of the hand, or with the fingers. Petrissage consists in gently pinching and rubbing the muscles and skin, always working upwards. Friction is performed with the tips of the fingers, and is said to be especially useful in joint affections. Tapotement consists in percussion by the tips of the fingers, palm of the hand, or its ulnar border. Massage should be performed with the dry hand, but care must be taken not to bruise or cause pain. The works of Weir Mitchell, Playfair, and Shreiber may be consulted with advantage, and Dr. Murrell's little book, entitled "*Masso-Therapeutics*," published by H. K. Lewis, London, gives all requisite information. Massage should be performed under medical advice, and the doctor should be present at the first application to see that it is properly performed.

MASTODYNIA.—This is the term applied to neuralgia affecting the breast region. It is a form of intercostal neuralgia affecting the intercostal nerves from the second to the sixth. Masturbation is said to be a cause. It often occurs at puberty, and from superlactation. Any anæmia present must be corrected. A belladonna or opium plaster may be worn. Fly blisters are useful, as is also galvanism, the anode being placed

over the tender spots. Iron, arsenic, and quinine are of service. In severe cases morphine may be injected locally.

MEASLES.—Nervous diseases occasionally, but rarely, follow after measles. Paraplegia from acute poliomyelitis may occur. Acute ascending paralysis and disseminated myelitis have been described. Hemiplegia may occur from thrombosis of the cerebral veins, and meningitis with optic neuritis. Some authorities consider that measles predisposes to the occurrence of cerebral tumours. In all cases after measles, the general health must be attended to, and a course of cod-liver oil, with Parrish's food, or some other preparation of iron should be given. A residence in the country, or by the sea, may be necessary for the complete restoration of health.

MELANCHOLIA.—In mild cases the patient should travel about with a trustworthy companion, and should visit places of interest either in this country or abroad. A sea voyage is too monotonous for such patients. Residence by the sea is harmful in most cases, and an inland mountainous district is much more beneficial. Mental and bodily rest is necessary ; and amusement, not work, must be provided. It is in all cases most important to see that the patient takes his meals regularly, and in sufficient quantities. Maltine, cod-liver oil, and generous wines are necessary, and the patient must not go without food for more than

two or three hours. Constipation should be relieved, and if necessary, sleep must be produced by chloral, the bromides, chloralamide, hyoscyamin, or Indian hemp. In severe cases asylum treatment is best, and for poor patients absolutely essential. In all cases there is great danger of a patient committing suicide, and he ought never to be left day or night. In the severe forms opium and Indian hemp are the most useful drugs. Forcible feeding is called for when food is refused. The three things to attend to in melancholia are diet, sleep, and constipation. Nervine tonics, such as iron, arsenic, quinine, and strychnine, are useful. Melancholia is apt to supervene in cases of diabetes, and is improved by appropriate dieting and medication.

MEMORY. — Loss of memory and of the power of attention is caused by many diseases of the brain, and by any disease which injuriously affects the cerebral nutrition, such as exhausting fevers. Organic diseases of the brain, affecting the cortex, are especially liable to be followed by loss of memory. The latter is a most important symptom, and often the first and chief one of degenerative disease, especially of general paralysis of the insane. Memory of recent events is lost, but not that of the distant past, and the power of retaining new impressions is most defective. The treatment must be directed at the cause present in each case. Mental rest is essential, while good

food, change of scene, a sea voyage, and nervine tonics, such as phosphorus, arsenic, iron, cod-liver oil, are valuable. I have seen great improvement in memory follow the prolonged administration of calabar bean, the patient being able to resume his work after an enforced idleness for twelve months.

MENIÈRE'S DISEASE. — Paroxysmal vertigo, tinnitus, and deafness are the three symptoms characteristic of this complaint. In severe cases the patient falls to the ground, and the vertigo is attended with severe nausea, cardialgia, vomiting, and prostration. Buzzard is of opinion that the symptoms more frequently result from central bulbar disturbance than from lesions of the labyrinth, and he recommends salicylate of sodium. In all cases the bromides in full doses may be given, and they often afford much relief. The affection is more common in gouty subjects than in others, and in them purgatives, alkalies, and colchicum are useful. Counter-irritation over the mastoid process is often beneficial. Quinine has been given in large doses, and was greatly recommended by Trousseau, but it frequently fails.

MENINGEAL HÆMORRHAGE. — Injury is a common cause of meningeal hæmorrhage, with or without fracture of the skull. Rupture of cerebral aneurisms is also a cause. Aneurisms of the cerebral arteries frequently result from embolism from diseased cardiac valves, and infective embolism is especially apt to lead to the

production of aneurisms which soon rupture. Meningeal hæmorrhage may occur in purpura, leucocythæmia, chronic nephritis, and scurvy. It is also occasionally met with in general paralytic dementia. It is of common occurrence as an accident of childbirth, being produced either by compression of the head during birth, or by the pressure of the forceps. It is also readily caused by the condition of asphyxia, so common in the new born. Meningeal hæmorrhage thus produced, is the common cause of the various birth palsies—spastic hemiplegia, spastic paraplegia, and bilateral spastic hemiplegia. The hæmorrhage may be outside the dura, beneath the dura, or beneath the arachnoid. The treatment is identical with that for cerebral hæmorrhage. Absolute rest in bed, with the head slightly raised, is essential. Ice may be applied to the head, and ergotin may be given in full doses. The prognosis is, as a rule, very unfavourable. When due to rupture of an aneurism, the hæmorrhage is usually very copious, and almost always fatal. In traumatic cases, Jacksonian epilepsy and hemiplegia are of common occurrence, and indicate trephining, which occasionally saves life; but the prognosis, even when the clot is found and removed, is far from good. In the later stages of meningeal hæmorrhage, iodide of potassium, internally, is of use, with cod-liver oil. The resulting paralysis, if any, must be treated in the usual way by massage and electricity.

MENINGITIS.—In tubercular meningitis the patient must be kept absolutely at rest in bed, and the room should be darkened. Sleep should be encouraged. The head should be shaved, and an ice cap (Leiter's coil or cold cloths) should be applied. An occasional blister may do good, but only a small surface of the head should be blistered at once. The bowels must be kept open, and a milk diet given. Alcohol is to be avoided, unless the pulse is very slow or irregular. Care must be taken that the child has a sufficiency of food, and should there be any difficulty in swallowing, nutrient enemata are indicated. Iodide of potassium must be given internally, in one grain doses, for a child over one year, with ten or fifteen minims of liq. hydrarg. perch. three or four times a day. Mercurial ointment may be rubbed in the axilla, or iodoform ointment over the scalp.

R. Iodoformi ʒi.

Vaselini ʒi.

M. Fiat ung.

A drachm of the ointment to be rubbed in twice a day. If delirium is present, chloral and the bromides are useful. For severe headache, the ice cap, the bromides, or small doses of chlorodyne or antipyrin do good. Vomiting may be checked by a mustard leaf applied to the nape of the neck or the epigastrium. Convulsions call for the warm bath, chloral, and the bromides. Ergot sometimes

seems to do good in these cases. Venesection is inadmissible in cases of tubercular meningitis, but one or two leeches applied to the temples may greatly relieve headache. The prophylactic treatment of the disease is very important. A phthisical mother should not nurse her offspring. Cleanliness and proper food are essential. The child should be sent into the country or to live by the sea until seven years of age, and should not be sent to school until that time, though a little daily tuition may be given at home. Proper discipline is essential to brain health. Woollen clothing must be worn, and plenty of milk should be given. The child is to be kept free from excitement, and ought not to be allowed to play or to get excited just before going to bed. Cod-liver oil and iodide of iron are very useful prophylactic remedies. SIMPLE MENINGITIS is treated the same way as is the tubercular variety. The prognosis is much more favourable. It may follow injury to the head, excessive mental effort, or the specific fevers. Iodide of potassium with mercury must be given internally, and an ice cap applied to the head. If the temperature is high, quinine or antipyrin is useful. SYPHILITIC MENINGITIS is of common occurrence in infants; the great symptom is *cervical opisthotonos*. The cases are chronic, and, if freely treated with mercury and iodide of potassium, often recover. In all cases of brain disturbance in infants and young children, it is wise to give grey powder or some other mercurial

preparation freely ; one grain of grey powder, with two grains of bicarbonate of soda, may be given twice a day to an infant with perfect safety. I have seen a child with opisthotonos, nystagmus, and blindness recover sight and grow fat on grey powder, all symptoms completely disappearing.

EPIDEMIC CEREBRO-SPINAL MENINGITIS.—Cold applications to the head and spine by means of ice bags are very valuable, as are opium and morphine for the relief of painful spasms. Quinine has been recommended in an early stage. Iodide of potassium and salicylate of sodium, also ergot and belladonna are useful, and in a later stage iodide of potassium with counter-irritation of the spine. During convalescence cod-liver oil, syrup of iodide of iron, saline baths, massage, and fresh air are essential. During the illness the patient must be placed on a water bed, and great care must be taken to prevent bed sores.

CHRONIC MENINGITIS may be alcoholic or syphilitic. Iodide of potassium must be pushed, counter-irritation being very useful. Abstinence from alcohol is essential. It may also be the result of gout, sunstroke, chronic nephritis, and traumatism. Counter-irritation by blisters applied to the nape of the neck is often useful for the relief of pain. Rest of mind and body is absolutely essential, and a mild unstimulating diet, consisting chiefly of milk. Iodide of potassium must be tried in gradually increasing doses, and if there is a history

of syphilitic infection mercury should be given in addition.

MERCURIAL POISONING.—Hydrargyria.—Mercury, like lead, acts very injuriously upon the nervous system of those habitually brought into contact with it in their occupations. Mercurial tremor is the most characteristic symptom, while paralysis is rare; whereas, in the case of plumbism, tremor is rare and paralysis common. The tremor affects the upper extremities chiefly, but may be general. Nystagmus does not occur, but the tongue, lips, and face may be affected, and mental symptoms may be present. In these cases, general paralysis of the insane is simulated. In some cases epileptiform convulsions, headache and coma occur. Neuralgic pains and numbness of the extremities are common. Ventilation of the workshops and the use of respirators are important measures of prophylaxis. When once tremor has occurred, it is absolutely essential for the patient to discontinue his work altogether, and find less dangerous employment. Fresh air, good food, and plenty of milk are necessary. Iodide of potassium must be given in gradually increasing doses. It eliminates the mercury from the system. Care must be taken with the administration of the iodide in acute cases, as an exacerbation of the symptoms may follow its administration. Iron, quinine, and strychnine, are useful adjuncts in the treatment. Galvanism is often beneficial.

METALLIC POISONING.—Many metals taken into the body in small doses, and for a prolonged period, lead to disease of the nervous system. The effects of lead, arsenic, silver and mercury are well-known. Arsenic is more readily diffused through the air than lead, and poisoning frequently results from inhabiting rooms with arsenical wall papers. Arsenic, given internally, often causes herpes zoster, and it produces, also, pigmentation of the skin. Arsenical neuritis is well-known, and the symptoms are much like those seen in cases of alcoholic neuritis. Ataxia may be marked, but in all cases there is much enfeeblement of the extremities, and paraplegia, with dropped feet, is usually present. Iodide of potassium is of use to eliminate the poison, and galvanism, or faradism with massage, are to be applied to the affected extremities; the treatment being the same as that for other forms of neuritis. Argyria is of very rare occurrence in these days, but some years ago, when silver salts were generally used for epilepsy, it was of common occurrence. A black line on the gums is often produced by silver given for a lengthy period. Drop wrist and paraplegia have been observed in chronic cases of silver poisoning. Pigmentation commences, usually, on the skin of the face, which should be closely observed in patients taking salts of silver. It is best to give the drug for a month, and then to discontinue it for a month. I have noticed nervous

symptoms to be of frequent occurrence in brass-workers, and I recently published some observations on ataxia with loss of knee jerk in men who worked with brass. The symptoms are probably due to chronic copper poisoning, which produces multiple peripheral neuritis. They yield to iodide of potassium, if given in increasing dosage, and for a long time. Milk is protective against chronic copper poisoning, and workers in brass should be advised to take it frequently. Turkish baths are very useful in all cases of chronic metallic poisoning, especially for chronic lead and mercurial lesions.

MICROCEPHALY is a congenital malformation in which the brain is very small; the skull is also small, its circumference sometimes being less than seventeen inches. The atrophy may be general or partial. In some cases where there is general atrophy there is bilateral athetosis and weakness of all four extremities. If unilateral atrophy is present, then hemiplegia and epilepsy often accompany it. Idiocy is nearly always present in cases of microcephaly, and illustrations of microcephalic idiocy may be usually seen in any large workhouse infirmary. No treatment is of avail for cure, but much may be done by good food and hygienic surroundings, with proper training.

MIND BLINDNESS.—In this condition the patient does not recognise familiar places and faces, there being loss of visual memory. Word blindness

is a partial mind blindness. Lesions of the cortex of the brain in the occipital lobes may produce mind blindness. A condition of mind deafness has also been described, word deafness being a partial mind deafness. The treatment must be directed at the cause present. If syphilis is at all probable, antisyphilitic remedies should be properly tried, good food and proper nursing being essential. Attempts must be made to re-educate the patient.

MONOPLLEGIA. — The varieties of monoplegia are brachial, crural, and facio-lingual. The face and arm centres being close together, these parts are often the seat of paralysis or spasm simultaneously. A monoplegia may be the result of lesion of the peripheral nerves, of the spinal cord, or of the brain. In cerebral cases the presumption is that the lesion is in the cortex. A diagnosis can be easily made by a careful consideration of the symptoms present in each case. In cerebral cases headache, vomiting, and optic neuritis may be present, but there is no wasting, no anæsthesia, and no loss of faradic irritability. The reflexes are exaggerated and the limb is rigid. The treatment will depend upon the cause. In all cases syphilis must be carefully looked for. The spine should be examined, for latent caries and growths compressing the sacral plexus on one or other side are to be suspected when the symptoms point to a peripheral lesion.

MORAL SENSE DEFECTS are of common occurrence in imbeciles, and occur as early symptoms in some cases of general paralytic dementia. Much improvement may be produced in the mental condition of imbecile children by careful training and education.

MORBID FEARS, such as dread of open spaces (agoraphobia), dread of closed spaces (claustrophobia), etc., are of common occurrence in neurasthenic subjects. Rest and freedom from worry are essential. The general health must be carefully attended to, and the exciting cause in each case as far as possible removed. General galvanisation or faradisation is often of great service. (See AGORAPHOBIA, page 6.)

MOTOR APHASIA includes agraphia and aphemia. (See page 18.) The lesion present may be a growth, a patch of softening, or a hæmorrhage. In all cases iodide of potassium may be tried. Aphasia is never permanent in children, the opposite hemisphere taking on the speech functions, and in adults much may be done by patience and care in the way of re-education. The lesion in cases of agraphia is situated in the posterior extremity of the second left frontal convolution, and in aphemia in the posterior extremity of the third left frontal convolution.

MOUTH, DRYNESS OF, OR XEROSTOMIA.—This rare condition occurs usually in women between the ages of fifty and sixty-five, but

may occur earlier. It has commenced suddenly after severe mental shock. All parts of the interior of the mouth are red and dry, and the secretion of saliva is arrested. Articulation is difficult, and swallowing has to be assisted by constant sipping. In some cases the lachrymal and nasal secretions are also checked, and the skin is dry. The condition has been especially described by Hadden and Hutchinson, and the former recommends jaborandi. Iodide of potassium proves useful in some cases, and the local application of glycerine is of value.

MULTIPLE NEURITIS may be caused by alcohol, arsenic, lead, copper, diphtheria, gout, diabetes, tuberculosis, syphilis, rheumatism, leprosy, exposure to cold, over-exertion, malaria and locomotor ataxia. It occurs occasionally after the specific fevers, especially after typhoid fever. It may be caused by exposure to the fumes of bisulphide of carbon. It occurs as an endemic disease named beri-beri. The treatment will vary somewhat with the cause, which must, if possible, be at once removed. In gouty neuritis, colchicum, with alkalies and appropriate dieting, is necessary. In malaria, arsenic, quinine, and strychnine are essential; in syphilis, mercury and iodide of potassium; and in rheumatic cases, salicylate of sodium. In acute cases, perfect rest is necessary, and attention must be paid to the position of the limbs. The feet should be prevented from dropping

by a roller. The diet must consist chiefly of milk, and be plain and unstimulating. Gentle aperients are of service along with diaphoretic remedies. Citrate of potassium with the solution of acetate of ammonium and salicylate of sodium are useful. Hot fomentations and poultices can be used if there is much pain, and leeches are occasionally very useful. In severe cases morphine or cocaine hypodermically is necessary for the relief of pain. In the chronic stage, counter-irritation by blisters or the cautery does much good, but care must be taken in counter-irritation of anæsthetic regions. Galvanism is indicated when the faradic irritability of the nerves is lost, but if retained, the faradic current may be used, except in acute cases. Daily massage, which must be gently performed, is of great use, and the patient must be encouraged to persevere in attempts to move the limbs. Hot and cold douches alternately to the affected limbs, are often useful in hastening recovery. Change of air is beneficial. Strychnine, phosphorus, iron, and arsenic are also of value in this stage of the disease. Iodide of potassium, combined with iron and strychnine, has often seemed to me to hasten recovery.

MUMPS.—Nervous symptoms may occur after mumps. I have seen cases of absolute and permanent deafness of nerve origin follow on mumps. Meningitis and meningo-encephalitis occasionally occur. Aphasia may also result,

probably from a local encephalitis or from softening, the result of thrombosis of a surface vein. Proper rest and good food, with iron and quinine, are necessary after the acute stages of this affection, and may ward off nervous sequelæ.

MUSCULAR HYPERTONY.—This condition is apt to occur after prolonged muscular effort, and when the legs are affected the condition may simulate spastic paraplegia, or organic disease of the spinal cord. Rest is the essential remedy. Massage and galvanism, along with nervine tonics, hasten recovery.

MUSCULO-SPIRAL NERVE.—Paralysis of this nerve is of common occurrence. Its exposed course round the humerus renders it liable to suffer from pressure and from cold. It is often compressed during sleep, the patient waking with dropped wrist. It may be paralysed on both sides in crutch palsy. Lead paralyses the posterior interosseous branch only. Rheumatic paralysis is of common occurrence. In rare cases, hysteria accounts for the affection. In rheumatic cases, diaphoretics, iodide of potassium and salicylate of sodium are indicated. In cases of pressure neuritis massage and galvanism are of most use.

MYELITIS may be acute, subacute, or chronic. Acute myelitis is caused by exposure to cold and damp, over-exertion, sexual excess, and traumatism. Syphilis predisposes to its

occurrence. If it has followed exposure to cold ; warm baths and diaphoretics are useful. Absolute rest in bed is essential, and the patient must lie in the prone position, or on one side, and not on the back. Chapman's spinal ice bag may be applied over the affected region, but warmth is perhaps better. Dry or wet cupping may be performed, and mild counter-irritation is useful. Care should be taken not to perform counter-irritation over an anæsthetic area, or where there is danger of a bed sore. It is most important to prevent, if possible, the occurrence of bed sores, which are a frequent cause of death in this disease. Water or air cushions should be used, and the patient should be placed on a water bed. The skin should be dusted with oxide of zinc, and bathed with diluted whiskey or spirits of wine. Any bed sore that may form must be kept as clean as possible, being dressed with antiseptic ointments, with a layer of picked oakum outside the dressings. It is also of equal importance to attend to the bladder, and if retention occurs the catheter must be systematically employed, and the bladder must be washed out daily. Great care must be taken to keep the catheters clean and disinfected. If cystitis occurs, the same measures must be employed, and the bladder must be washed out at least twice a day with some disinfectant, such as Condy's fluid or boracic acid. The internal administration of the benzoates of sodium and ammonium, saccharin,

and naphthalin tends to prevent decomposition of the urine and resulting cystitis. The bed urinal must be used if necessary, and care must be taken by cleanliness to avoid sloughing of the prepuce. Internally ergot and belladonna may be given, with saline purgatives occasionally. If there is any suspicion of syphilis, mercurial inunction should be performed daily, and iodide of potassium must be freely prescribed. Electricity ought not to be employed in acute cases. Alcohol, tea, and coffee should not be given, and the diet must consist chiefly of milk. The prognosis is very unfavourable as regards complete recovery; it is best in cases of dorsal myelitis, much more serious when the lumbar or cervical regions are affected. Bed sores are a serious danger in themselves; in one case of mine, tetanus supervened on the formation of a bed sore. Many cases pass into a chronic stage, leaving a spastic paraplegia; but ultimately complete recovery may ensue even after some years' duration. Chronic myelitis may be a sequel to the acute form, or may occur independently. In all cases an enquiry should be made as to syphilis, and the appropriate remedies given if there is any suspicion of syphilis being the cause. Rest is very useful in these cases, and the patient should use a wheeled chair. Over-exertion and exposure to cold and wet are dangerous. Baths, hydropathy, and the hot douche to the spine are very beneficial. Mild counter-irritation to the

spine by fly blisters or iodine is useful. Galvanism may be employed, and internally iodide of potassium with belladonna does good. Phosphorus, cod-liver oil, iron, strychnine, and the nitrate or phosphate of silver may be tried. Suspension and massage are sometimes beneficial in cases of chronic myelitis. If pain is a prominent symptom, together with cramps, morphine hypodermically is the best remedy. Extension by weights may be necessary to prevent contracture, and in all cases the position of the limbs should be attended to. A regular life, free from mental or bodily exertion or excess, is necessary, and sexual intercourse must be interdicted. Galvanism to the spine should be tried and persisted in daily for several months. Thermal brine baths are recommended by some authors.

MYOCLONUS MULTIPLEX.—This is a rare condition of clonic spasm of the limbs, first described by Friedreich. The affection is closely allied to senile chorea. Galvanism or static electricity usually gives relief. Bromides and nervine tonics, such as arsenic and iron, are useful.

MYOPATHIC ATROPHY.—This term is applied to idiopathic muscular atrophy, due to a morbid development, and not dependent upon disease of the central nervous system. It includes pseudo-hypertrophic paralysis, and those forms of muscular atrophy that affect young people and run in families. The leg type and the shoulder and

facial types of muscular atrophy belong to this group. Treatment is not of much use. Massage and electricity may be beneficial. It is important to keep the patient on his legs as long as possible, and not to let him take to bed.

MYXŒDEMA.—Nervous symptoms occur at some time or other in the course of this disease. The subjects of the complaint are characterised by a remarkable placidity of temperament. In the course of the disease epileptiform attacks and delusions often occur, and coma is the final termination. The disease is very fatal, though very chronic. The general health must be attended to. Hot air or vapour baths, daily administered, have been highly recommended. Dr. Ord recommends the prolonged administration of jaborandi, ten to sixty minims of the fluid extract being given three or four times a day. Digestion must be attended to, and warm clothing is essential. The subjects of this affection complain bitterly of the cold, and are, as a rule, better with warmth. The circulation is always feeble, and the extremities usually cold; the temperature of the body is subnormal. Iron and arsenic are of service; massage and electricity are also useful. Nitro-glycerin has been recommended, but in my hands it has not been of any use.

NARCOLEPSY is the term applied to a condition in which there is a tendency to fall asleep, usually for a short time. It occasionally occurs in

hysteria, but more often from imperfect action of the digestive organs. The drowsiness and persistent tendency to fall asleep are sometimes so marked that the patient is quite incapacitated for work. If he sits on a chair for a few minutes he drops off to sleep—in fact, whatever he may do, he is unable to resist the tendency to sleep. The condition may occur in gouty subjects and in cases of adiposity, and seems to be due to excess of poisonous extractives in the blood, such as leucomaines and ptomaines. In these cases iodoform, naphthalin, and charcoal are useful. Overfeeding, beer drinking, and alcohol in other forms, sometimes seem to be the causes. In some cases the liver is at fault, and then calomel or blue pill, with euonymin, is useful. Purgatives are indicated, and in all cases the patient must be put upon a spare diet. Cold bathing in the morning, or a shower bath, is beneficial. The mineral acids given before food, and the avoidance of a heavy mid-day meal, sometimes suffice for a cure.

NAUSEA usually accompanies the act of vomiting, but it may exist independently. It is common in the early morning in drinkers, and is then due to gastric catarrh or congestion of the liver. A mercurial or saline purge is often sufficient for its removal; but in all cases a proper regulation of the diet, with avoidance of excess in smoking and in alcoholic liquors, is essential. Vomiting, not preceded by nor accompanied with nausea,

often occurs in hysteria. The vomiting of organic cerebral disease is also frequently unaccompanied with nausea. So that the absence of nausea should suggest a cerebral cause for vomiting, but its presence does not negative a cerebral cause.

NEPHRALGIA.—Attacks of pain in the region of the kidney may occur in locomotor ataxy. The attacks are really renal crises, and are best relieved by a morphine injection. In other conditions, it is far more probable that a calculus is the cause rather than that it is a true neuralgia.

NERVE DEAFNESS most commonly arises from disease of the labyrinth. It may be due to lesions of the trunks of the auditory nerves, as in cases of locomotor ataxy, syphilis, or cerebral growths. Bilateral disease of the superior temporo-sphenoidal convolutions would produce deafness. In some cases it arises from functional causes, such as exhaustion. If syphilis be suspected, then iodide of potassium with mercury must be freely given. In recent deafness, blisters over the mastoid process and galvanism are sometimes useful. Iron and strychnine should be given internally. I have seen absolute deafness of nerve origin follow mumps in one or two instances.

NEURALGIA is always a sign of depressed tone, calling for rest and ample food. Fats, in the form of milk, cream, butter, or cod-liver oil, should be given freely. Fresh air and animal food are indicated in all cases, but meat, though very

useful in the treatment of neuralgia, must be taken sparingly in gouty neuralgia. The treatment will depend upon the cause, which must be sought for and removed. In rheumatic neuralgia, salicylate of sodium, quinine, iodide of potassium with iron and antipyrin, are all of use. In anæmic neuralgia, iron salts and arsenic are indicated. In gouty neuralgia, colchicum and salts of lithium and potassium must be given; in diabetic neuralgia, appropriate dieting with codeina or antipyrin; in syphilitic cases, iodide of potassium with mercury; in malaria, quinine, arsenic, and strychnine. If the symptoms are due to plumbism, sulphate of magnesium with iodide of potassium must be prescribed, iron being added if there is anæmia. In all cases, any source of irritation present must be removed. Morphine, hypodermically, is not only palliative but curative, and the injections are preferably made near the seat of pain. Atropine sometimes acts as well as the morphine. Injections of one or two minims of a one per cent. solution of osmic acid into the region of the pain have been recommended, but they frequently fail and are not free from danger. In all cases, gelsemium should be fully tried, the dose being gradually increased. The alkaloid gelsemia may be injected in doses of one sixtieth of a grain or more. A combination of quinine, arsenic, and gelsemium suffices for the cure of most recent cases. Any constipation present must be relieved, and purgatives with

quinine sometimes succeed where quinine alone fails. Antipyrin, phenacetin, exalgine, and acetanilide may be tried, the first-named drug being a very useful anodyne. Nitro-glycerine occasionally does good, especially in certain cases of migraine attended with vasomotor spasm. Phosphorus is not a very efficacious remedy in neuralgia, but it sometimes succeeds; it may be prescribed in the form of the phosphoretted oil given in capsules or with cod-liver oil, in pill, or in solution.

R.	Phosphori	gr. $\frac{1}{2}$	
	Alcohol absol.	q.s.	
	Glycerin.	ʒii.	
	Aq. Menth. pip.	ad ʒiv.	M.

Sig. A teaspoonful three times a day after meals.

Strychnine acts well. Aconite is of service, especially in severe intercostal neuralgia. Its alkaloid aconitia may be prescribed, the dose being 1/150th grain. Tonga, in one or two drachm doses, is said to be efficacious in cases of facial neuralgia. Chloride of ammonium in full doses is sometimes useful; at least half a drachm must be given and frequently repeated. Butyl-chloral hydrate in five grain doses, repeated every quarter of an hour during a paroxysm, often affords relief in trifacial neuralgia. Local remedies are of great use, but general treatment is nearly always required in addition. The liniments of aconite, opium, and chloroform may be applied separately or in combination. The ointments of veratria and

aconitia are useful, and so is menthol, either in the solid form or in solution. In neuralgia of the branches of the fifth nerve, when the gums or mucous membrane of the lips are the seat of pain, great relief is obtained by the local application of a ten or twenty per cent. solution of cocaine, which the patient should carry about with him. Dr. Mortimer Granville's instruments may be tried in obstinate cases. Acupuncture, nerve-stretching, and neurectomy are to be resorted to if drugs fail. Neurectomy is rarely advisable, the pains as a rule soon return, and in all cases nerve-stretching should be first tried. Blisters and counter-irritation with the actual cautery are of great service in obstinate cases of intercostal neuralgia and sciatica. In all cases it is of the utmost importance to make a careful examination of the patient, and to ascertain whether the neuralgia is symptomatic or idiopathic. Severe intercostal neuralgia is often due to spinal caries or to aneurism; in such cases rest is absolutely necessary for the relief of pain. If neuritis is present, then the treatment for that condition is called for. Anæsthesia is not a symptom of neuralgia; if it is present, then there is organic lesion and neuritis of the nerve, or some compression. Rest is an important feature in the treatment of sciatica. Massage and galvanism are valuable remedies for neuralgia. In applying galvanism, the anode is usually placed over the painful points, the cathode on the spine or

sternum, and daily applications must be made of about ten minutes' duration. Saline thermal baths and hydropathy are of use in obstinate cases of sciatica. The treatment of visceral neuralgia is to be carried out on the same principles, and in all cases the exciting causes must be as far as possible removed. Arsenic is of great service in the treatment of gastrodynia. Morphine, internally or hypodermically, is also of use. Codeina has been strongly recommended for abdominal neuralgias. Indian hemp and turpentine are old and useful remedies.

NEURASTHENIA.—This term is a convenient one to describe the various symptoms observed in nervous people. Neurasthenia may be inherited or acquired. The children of neurotic people require a very careful training in early years if they are to go through life successfully. Worry, anxiety, emotional shock, disappointment, and want of success in life are potent causes of neurasthenia. Deficiency of food and faulty hygienic surroundings predispose to its occurrence. The condition occurs chiefly in brain workers, and especially where there is worry as well as work. Neurasthenia often completely disappears on an improvement in the patient's prospects, or on correction of faulty habits. No two cases are exactly alike, but the following symptoms are present at one time or another, namely, abnormal sensations in the head, such as a sense of pressure,

or actual headache, numbness of the extremities, dilatation of the pupil and drooping of the eyelids, morning ptosis, flushings, perspirations and tremors. Neurasthenic tremor may be general; it ceases when the patient is absolutely quiet and free from emotional excitement. Clonic muscular spasm is common, especially of the orbicular muscles of the eyelids, but it may affect the neck muscles or body generally, and frequently occurs just as the patient is going off to sleep. Insomnia and palpitation may be distressing symptoms. Neurasthenia may end in insanity, and occasionally is followed by grave organic diseases of the nervous system. Usually, however, though very chronic, it is not serious as regards life, and old age is usually reached. Various morbid fears may supervene and render the patient's existence wretched—in fact, such patients are usually in a chronic state of fear and morbid apprehension. In all cases a careful enquiry into the patient's habits should be made, and rules must be laid down for his observance. If the symptoms have been caused by overwork, a prolonged holiday is necessary. Usually, a quiet inland health resort is better than the sea-side. Excitement is injurious, and care must be taken that the patient is not fatigued. Outdoor exercise is essential, with a caution against too much walking. In some cases, at an early stage, a long sea voyage entirely cures the patient. Brain workers require a great deal of sleep, usually at

least nine hours, and a day occasionally spent in bed is beneficial. It is also essential that a sufficient amount of food is taken; an addition of a pint of milk daily to the diet is often of service. Stimulants are not essential, but may be allowed in small quantities. Tea and coffee must be taken in moderation. Smoking in excess is injurious, but in moderation it often seems more beneficial than otherwise. Recreation is essential, and in some form or other should be taken daily. Sexual excess is a potent cause of neurasthenia, and the act of coition may be followed by great exhaustion. In such cases sexual intercourse must be interdicted. A morning sponge bath with tepid or cold water is highly beneficial, and cold water douches to the head often relieve distressing sensations therein. The insomnia of neurasthenia is to be treated by change of air and rest. The bromides may be given at night with hyoscyamus or Indian hemp, but it is very important not to give the bromides in excess in cases of neurasthenia. Valerian, sumbul, and other nervine tonics, such as iron, phosphorus, quinine, and strychnine, are often of great service. The phosphide or valerianate of zinc is at times serviceable in cases of neurasthenic tremor. In severe cases the Weir Mitchell treatment must be carried out. The patient is removed from her home and kept absolutely at rest in bed, under the charge of a judicious nurse. Systematic daily rubbing and faradisation of the

muscles must be performed, and the patient is gradually made to take an enormous amount of food. A great gain in weight ensues, and with it a marked improvement in the patient's mental condition. Massage and faradisation are essential for counteracting the evil effects that would arise from the prolonged rest and excessive feeding. General faradism or galvanism is of great service, as is also static electricity. Any anæmia or other disturbance of the general health must be remedied, and constipation, dyspepsia, amenorrhœa or other disorder of the sexual organs, must be attended to. It is said that errors of ocular refraction, in some cases, are responsible for the nervous exhaustion. Reading must be prohibited in bad cases, and errors of refraction corrected.

NEURASTHENIA SPINALIS. — In some cases the spinal cord is chiefly affected, mental symptoms being slight, or not present at all. The affection is met with chiefly in young men, and is brought on by sexual excess, or by overwork. They complain of great fatigue after even slight exertion, and occasionally tremor of the lower extremities is present. The knee jerk is exaggerated, but ankle clonus is absent. Sometimes a condition amounting to slight paraplegia is met with, and in addition there may be sexual weakness, and want of tone in the bladder. Pain in the back may be present, but there is not that excessive superficial tenderness that is so charac-

teristic of spinal irritation. Hydropathic treatment is often of service, while rest and freedom from work and worry are essential. Fatigue must be carefully guarded against, a walking tour being quite out of the question. Mountainous districts, such as Switzerland, are especially suitable for these cases. The application of galvanism or faradism to the spine is useful, as are also nervine tonics, such as iron, phosphorus, strychnine and quinine. I have at present a young man suffering from spinal neurasthenia brought on by overwork. He declares that he cannot walk properly when he is not taking the pills I ordered. They consist of two grains of valerianate of zinc in each pill, two or three being taken daily. Of course, a good diet, plenty of sleep, and a correction of faulty habits, are necessary.

NEUROPARALYTIC OPHTHALMIA.—

This affection occurs in irritative lesions of the fifth nerve, especially when the lesion implicates, or is in front of, the gasserian ganglion. The treatment is that for the primary disease present.

NICOTINISM.—Tobacco smoking is often injurious in spare neurotic men, and should always be taken in great moderation in those predisposed to nervous disorders. Among the symptoms of chronic tobacco poisoning are vertigo, headache, mental depression, general muscular tremor and weakness, local spasms, such as twitchings of the facial muscles and blepharospasm. Spasmodic

attacks on falling off to sleep are of common occurrence. The special senses are much affected—touch, taste, and smell may be all blunted, while hearing and sight are especially deranged. There is a confusion of sounds, and an inability to pick out certain notes, and tinnitus is common. Tobacco amblyopia and colour blindness are well-known. The pupils are often dilated. Loss of memory, irritability, irresolution, and even actual insanity, may result. A general paralysis, with marked mental failure resembling paralytic dementia, may be brought about. Cigar smoking is worse than the use of a pipe, and cigarette smoking is very injurious because of the direct inhalation of the smoke, and from the tendency to constant indulgence. Angina pectoris, palpitation, and cardiac debility are of common occurrence in great smokers. When any of the above symptoms appear, the habit should be discontinued. A speedy recovery soon results as a rule. Strychnine, iron, and quinine are the most useful drugs for the treatment of nicotinism. The hypodermic injection of strychnine may be used in bad cases.

NICTITATION.—Clonic spasm of the orbicular muscles of the eyelids is frequently observed in hysterical attacks. It may occur on one or both sides as an obstinate affection, especially in neurotic women. Worry and prolonged anxiety are potent causes of the affection. It forms a variety of habit chorea met with in

children, and also occurs as a temporary affection after a little extra work amongst professional and business men. Rest and change of scene, with freedom from worry, are all important in the treatment. Arsenic and the bromides are of much benefit. The salts of zinc, gradually increased till larger doses are taken, sometimes prove successful in bringing about a cure. Galvanism is indicated. (See BLEPHAROSPASM, page 33.)

NIGHT TERRORS, OR NIGHTMARE.—

A nervous affection occurring usually in children. It is closely allied to somnambulism, but the latter is much rarer. In many cases it is caused by over-work at school. In all cases the child should be taken from school for a time, and worms or other causes of irritation call for removal. A bromide and chloral draught must be given at bed-time, and only a light supper is admissable. Nervine tonics are needed, such as iron and cod-liver oil. Night terrors sometimes occur in over-worked professional and business men. The bromides at bed-time and a holiday usually suffice for their cure.

NOCTURNAL PARALYSIS.^x — This condition was first described by Weir Mitchell, who observed it in nervous women about the period of the menopause. It is a condition of paresis with numbness of the extremities, which arises under the influence of night in neurasthenic subjects. It is probably mainly owing to the fall of temperature and the slackening down of the circulation in

In some cases epilepsy! (Higier 1897)

the night. The condition may also be brought on during the day time by over-exertion. There may be hemiplegia, the face and tongue being affected, or all four extremities may be attacked. A brachial monoplegia is the commonest variety. The patient awakens with numbness or tingling, with paresis of one or more of the limbs. The condition wears off in an hour or two, and its disappearance is hastened by friction. In these cases the general health must be carefully attended to. Food should be taken at bedtime. A cup of warm milk is very useful just before retiring to bed. The patient should be kept warm, and bed-socks with flannel underclothing should be worn at night. The bromides with arsenic, strychnine, or iron usually suffice for a cure. Hydropathy and general faradisation or galvanism are also useful measures.

NOCTURNAL VERTIGO. — Neurasthenic people are liable to attacks of vertigo just as they are falling off to sleep, the bed often seeming to be lifted up. The sensation is distressing and prevents sleep. Overworked professional men sometimes complain of a peculiar feeling running from the epigastrium upwards to the head just as they are about to drop off to sleep; the sensation alarms them and they are afraid to go to sleep for a time. The same sensation is occasionally experienced after sexual intercourse. Sometimes there is a nervous disturbance of breathing. A bromide draught taken shortly before going to bed

usually at once checks the above sensations. Nervine tonics, with rest, and appropriate treatment, prevent their recurrence.

NOSE.—Diseases of the nose are potent causes of nervous troubles. Asthma frequently results from polypi or other affections of the mucous membrane. Nasal obstruction is a cause of stupidity and mental inability in children. Disease of the nasal bones from syphilis or struma may lead to the development in the brain of an abscess, which is usually situated in one or other frontal lobe. Antiseptic injections and frequent washing out of the nasal cavities are necessary. All growths must be removed, and any hypertrophy of the mucous membrane treated with the cautery or by ablation. Iodide of potassium with iron and cod-liver oil are the usual internal remedies.

NUMBNESS.—This feeling may result from cerebral, spinal, or peripheral lesions. It is an important prodromal symptom of cerebral hæmorrhage in old people, and indicates the use of purgatives and rest in bed. It may also precede an attack of cerebral thrombosis, and here purgatives, at any rate powerful ones, should not be used. The condition of the heart and pulse tension must be taken as the guide to treatment. Numbness of the hands and feet is an important symptom of multiple neuritis, and together with cramp is an important prodromal symptom of alcoholic paralysis. Numbness is a common

symptom of locomotor ataxia. Dyspepsia and gastric catarrh are occasionally causes of numbness of one or other upper extremity. Anæmia is also a probable cause. Hysterical and neurasthenic subjects are apt to suffer from numbness of one or more extremities, and the condition is often observed in them on waking in the morning, when it usually passes off after a little rubbing. The treatment must be directed to the cause present in each case. Post-hemiplegic numbness must be treated by friction, massage, faradism, and iodide of potassium, or other drugs calculated to improve the cerebral conditions present. Numbness of the left arm, or of both in some instances, often occurs in angina pectoris, or in cases of intra-thoracic aneurism.

NYSTAGMUS.—This consists in clonic rhythmical spasm of the external ocular muscles. It is nearly always bilateral, and very rarely affects one eye only. The causes may be local or central. Corneal opacities, retinal defects, and errors of refraction may bring about the condition. Lesions of the cerebellum are the most common among the central causes. Nystagmus is of frequent occurrence in Friedreich's ataxia, multiple sclerosis, and hydrocephalus. Miner's nystagmus is well-known. Albinos also usually suffer from the affection. The condition is generally incurable. Any sources of reflex irritation must be removed, and errors of refraction must be corrected. Galvanism may be

tried, the anode being placed over the mastoid process, and the cathode over the closed eyelid. I have frequently seen nystagmus in children from syphilitic basilar meningitis completely disappear, and perfect recovery follow a prolonged course of treatment by grey powder. Nystagmus never occurs in paralysis agitans, but it is a very important symptom in multiple sclerosis. It may also occur in uræmia, and may disappear on recovery from this state.

OCCUPATION NEUROSES.—Writer's cramp may be taken as the type of these affections. A spasmodic and a neuralgic form exist, and in some cases sensory symptoms may predominate. Muscular atrophy may result from over-use of the small muscles of the hand, and a true progressive muscular atrophy may be induced by over-exertion. Exhaustion paralysis, often preceded by painful cramps, may also be the result of excessive muscular work. (See page 89.)

OCULAR NEURALGIA, in which the eyeball is the seat of intense pain, may be caused by rheumatism, and occurs especially in anæmic women. Hypermetropia is usually present, and ocular strain may be the exciting cause of an attack. In all cases care must be taken not to overlook the presence of glaucoma. Belladonna fomentations, the application of a solution of cocaine, and the internal administration of quinine, iron, arsenic, or gelsemium usually give relief.

Errors of refraction must be corrected by appropriate glasses.

OCULAR PARALYSIS.—Paralysis of one or more of the motor nerves of the eyeballs is usually caused by syphilis, diphtheria, cold, or by some lesion at the base of the brain. Transient ocular paralysis is of common occurrence in early stages of locomotor ataxia. The paralysis usually gets well of itself, in marked contrast to the optic atrophy which also commonly occurs in this disease. Periodical palsy of one or more of the ocular muscles may occur, especially in neurotic women. The affection usually dates from early childhood, and its paroxysms are attended with severe pain in the eye, headache, and vomiting. Dropping of the eyelid or complete transient paralysis of the third nerve is often observed after a severe attack of migraine. The paralysis passes off in a few days. In recent cases counter-irritation by blisters to the temples, hot fomentations, and leeches are indicated. In diphtheritic cases, iron and strychnine are of most use. If syphilis is the cause, iodide of potassium and mercury must be fully tried. In all doubtful cases, it is well to give iodide of potassium in increasing doses. Galvanism may be tried, the anode being placed on the neck, and the cathode over the closed eyelid. Faradisation may also be used with care. Diplopia must be corrected by appropriate glasses. In all cases the fundus oculi should be explored. If a

tubercular growth is suspected, cod-liver oil and syrup of iodide of iron must be given. Vertigo is a common result of weakness of an ocular muscle, the treatment being that for the lesion causing paresis. In severe cases the eyelid on the affected side must be kept closed.

ŒDEMA.—This condition may be produced by nervous disturbance. It often occurs in the paralysed limbs in cases of myelitis, peripheral neuritis, and in cerebral hemiplegia. It may occur in any part affected with neuralgia, and in chronic cases may lead to induration of the part with bony overgrowth. Fugitive œdema of the eyelids has been observed at the menopause. In neurotic women, fugitive patches of œdema are sometimes observed in the hands and feet, which are tender and pit on pressure. The general health must be attended to. Arsenic, iron, and strychnine, with massage and electricity, are usually successful in the treatment of this condition.

ŒSOPHAGUS.—Spasmodic stricture of the œsophagus may occur in hysterical women, and may occasionally be so severe as to simulate organic disease. It is very rarely due to central lesions. It may, however, be caused by reflex irritation in cases of ulceration of the œsophagus. It is usually accompanied by "globus hystericus." Isolation and the Weir Mitchell treatment may be necessary. Feeding must be done through a stomach tube if necessary. Internally the

bromides with asafoetida, valerian, and other antispasmodics may be given with advantage. The general health must be looked after. Galvanism or faradism is very efficacious in some cases. Paralysis of the œsophagus may follow diphtheria, or may be due to hysteria. When it results from bulbar disease the prognosis is very grave. Death is apt to occur from lobular pneumonia, or gangrene from the entry of food into the air passages. The patient must be fed with the stomach tube. Iron and strychnine must be given, and the latter may be injected locally. The continuous or the interrupted current may be tried.

OLFACTORY NERVE.—Anosmia, or olfactory anæsthesia, may be due to hysteria, or may result from morbid conditions of the mucous membrane. Hyperalgesia occurs also in hysterical and neurotic subjects, an aversion being shown to odours appreciated by healthy people, and a predilection for disagreeable odours. Illusions of smell are of frequent occurrence in the insane, and loss of smell occasionally occurs in locomotor ataxia. An olfactory aura may precede and accompany attacks of Jacksonian epilepsy where the lesion is situated in the temporo-sphenoidal lobe, this aura being a very important localising symptom.

ONIOMANIA.—This term is applied to a variety of recurrent insanity, the attacks of which depend upon, or are associated with, a drinking tendency.

OPHTHALMOPLÉGIA EXTERNA.—This term was applied by Hutchinson to a progressive bilateral paralysis of the external muscles of the eyeballs. The paralysis is symmetrical, but not always exactly so. The condition may result from syphilis; in fact, this is the common cause. It also occurs in the course of the chronic degenerative diseases of the nervous system, *e.g.*, locomotor ataxy, multiple sclerosis, and general paralysis. It sometimes accompanies bulbar paralysis and progressive muscular atrophy. It may also result from exposure to cold, and I have seen it occur in chronic alcoholism. The lesion is nearly always central, the nuclei of the ocular nerves being affected, but in rare cases it is probable that the nerve trunks themselves are diseased, there being a peripheral neuritis. Ophthalmoplegia may be produced suddenly by hæmorrhage or vascular occlusion in the floor of the aqueduct of Sylvius. Thrombosis of the cavernous sinus will cause ophthalmoplegia on the same side. I have recently seen two cases, exactly similar, where there was complete ophthalmoplegia of one eye, the other being unaffected, the fifth nerve was also implicated, but there was no optic neuritis and no loss of vision. In each case there was a growth arising from the dura mater at the base of the skull, and implicating all the nerves as they pass through the outer wall of the cavernous sinus and sphenoidal fissure, a monocular ophthalmoplegia being pro-

duced. Ophthalmoplegia externa has occurred in exophthalmic goitre, and has been recorded in a case of hysteria where no lesion was discovered at death. The treatment must be directed at the cause present. Iodide of potassium must be given in gradually increasing doses, till large quantities, sometimes two or three drachms, are taken daily. Mercury should be given as well. The prognosis is not very favourable, even in syphilitic cases; still, a few recover with appropriate treatment. In chronic alcoholism the ophthalmoplegia gradually disappears on total abstinence from alcohol. Counter-irritation and galvanism or faradism are also of use. Though paralysis of single ocular nerves in locomotor ataxy is often recovered from spontaneously, the condition of ophthalmoplegia when it occurs is permanent and incurable. In diphtheritic cases iron and strychnine are useful.

OPHTHALMOPLÉGIA INTERNA means paralysis of the muscles of the iris and of the muscle of accommodation. It may occur independently of ophthalmoplegia externa or be associated with it. It is caused by syphilis, diphtheria, locomotor ataxy, and multiple sclerosis. The treatment is that for the external variety.

OPISTHOTONOS.—This term is applied to the arched position of the body often observed in tetanus. There is predominant spasm of the muscles of the back, the head being forcibly retracted, and the body often being supported only

by the head and the heels. Opisthotonos is also often present in hysteria and in hystero-epileptic attacks. The treatment is that for tetanus or hysteria. Retraction of the head, constituting a cervical opisthotonos, is a very important symptom of basic meningitis and of tumours of the cerebellum.

OPIUM HABIT. — Mental depression, disturbed sleep, muscular prostration, and paralysis, especially of the lower extremities, may occur from chronic opium poisoning. These subjects also generally suffer from anorexia, constipation, and wasting of the body. An insatiate craving for the drug is present. The Weir Mitchell treatment might be tried, the drug being abruptly discontinued. Hypnotic suggestion is said to have proved successful.

OPTIC NERVE ATROPHY may be primary or secondary to optic neuritis and retinal changes. Primary optic atrophy may be hereditary, various members of a family becoming blind at an early period of adult age. It occurs very frequently in locomotor ataxy, and is often a pre-ataxial symptom; it is common also in other chronic degenerative diseases, such as multiple sclerosis, general paralysis, and lateral sclerosis, and also from pressure, as in chronic hydrocephalus. It occasionally occurs in those who have had syphilis, apart from any sign of locomotor ataxy. Diabetes and chronic alcoholism are also causes. Sexual

excess is a potent cause. Unilateral optic atrophy may occur on the side of the headache in migraine. The prognosis is much better in secondary than in primary atrophy ; in the latter it is very grave, and usually ends in complete blindness. Iodide of potassium should be fairly tried in all cases. Iron and strychnine, phosphorus, nitrate of silver, and galvanism may be used. Pilocarpin has recently been recommended. Of course, any debilitating cause must be removed, such as lactation, diarrhœa, menorrhagia or other hæmorrhage. Smoking must be forbidden. Lead-poisoning may be the cause in a given case ; then iodide of potassium with sulphate of magnesium is useful.

OPTIC NEURITIS is caused by cerebral tumours, basic meningitis, anæmia, chlorosis, amenorrhœa, exposure to cold, chronic kidney disease, lead-poisoning, alcoholism, ague, and syphilis. It may follow an injury to the head, with or without the formation of an abscess. The cause must always, as far as possible, be removed. Iron and arsenic are essential in anæmic and chlorotic patients. In all cases, even if the cause be a cerebral tumour that cannot be cured by drugs, iodide of potassium with mercury should be given in full doses, for thereby the neuritis may be benefited and blindness prevented.

OSMIDROSIS OR BROMIDROSIS is observed occasionally after lesions of the peripheral nerves, the perspiration having a peculiar odour.

Boracic acid lotions, or other disinfectants, are useful.

OTITIS.—In children, attacks of acute otitis may almost exactly simulate meningitis. Headache, vomiting, convulsions, fever and delirium, may all occur in acute otitis, without any meningeal disease. It is said that optic neuritis may also be due to otitis. The presence of deafness is an important diagnostic sign. In all doubtful cases the ears should be examined, and, if necessary, the membrana tympani must be incised. Refraction of the head, and paralytic symptoms, would point strongly to meningitis. Facial paralysis might, however, be due to otitis. Leeches, warm fomentations and poultices, are useful for the relief of pain. Purgatives are also indicated.

OVARIALGIA consists in severe attacks of pain felt in one or other iliac fossa in women, and attended with extreme tenderness. It is especially observed in bad cases of hysteria or hysterio-epilepsy, pressure on the painful parts causing globus, tetany or convulsions. The Weir Mitchell treatment may be necessary. The bromides with valerian and asafoetida do good. Counter-irritation is also useful. In inveterate cases, oophorectomy may be necessary.

PACHYMENINGITIS, or inflammation of the dura mater, may affect the cerebral or spinal dura, and the membrane may be affected on its external or internal surface. Pachymeningitis

interna occurs in two forms, the hypertrophic and the hæmorrhagic. *Pachymeningitis interna hypertrophica* usually occurs in the cervical region of the spine, the cord being surrounded and compressed by a ring of dense fibrous tissue. The nerves passing off from the cord through the affected membrane are also compressed, thus giving symptoms very characteristic of the affection. The muscles of the neck are usually rigid, and the disease much resembles amyotrophic lateral sclerosis, but is distinguished from it by the presence of sensory disturbance. The condition is supposed to be due to injuries, syphilis, and exposure to cold. Counter-irritation with iodine, blisters, or the actual cautery, frequently repeated, is of great use. Iodide of potassium, nervine tonics, and cod-liver oil are useful. The resulting paralysis must be treated with massage and electricity. In many cases a complete recovery ensues at the end of two or three years. *Pachymeningitis spinalis externa* occurs especially in connection with spinal caries and bed sores. The symptoms are those of irritation of the nerve roots, and compression of the cord. The usual treatment for the paraplegia of spinal caries must be adopted. In severe cases the spine should be trephined, and the growth removed from the dura. *Pachymeningitis cerebialis externa* results from injuries and from adjacent bone disease. It is especially associated with chronic ear disease. Counter-irritation

and removal, as far as possible, from the exciting causes are necessary. Pachymeningitis interna hæmorrhagica is most frequently cerebral. When it does occur in the spinal dura, it is also present in the cerebral at the same time. It is especially associated with dementia and general paralysis. Alcoholism and traumatism are supposed to be causes. It appears in old age, and is of rare occurrence. Headache and giddiness are usually complained of, and optic neuritis may be present. The patient is liable to apoplectiform attacks, due to hæmorrhage from rupture of the capillaries in the membranes which are formed on the diseased dura. If the condition can be diagnosed, ergot may be of use. In all cases the patient must be kept at rest and free from excitement. The bowels must be regulated, and tonics and cod-liver oil are of use. The same precautions, in fact, must be taken as for the prevention of ordinary apoplexy.

PAINFUL POINTS.—These occur in neuralgias of peripheral origin, and were first described by Valleix. They are found where the nerves pass through openings in fascia or emerge from bony canals. They are specially marked during the paroxysms of pain, but may persist in the intervals. In neuritis, tenderness is found all along the nerve, and not at one or two points only. Counter-irritation by blisters over the tender points is very useful in the treatment of neuralgia, and in

the application of galvanism it is considered best to apply the anode to these points.

PALATE.—The motor nerve to the soft palate is probably the spinal accessory. A growth at the side of the medulla may cause paralysis of one half of the tongue, one vocal cord, and one half of the soft palate on the same side, from pressure on the hypoglossal and spinal accessory nerves. It is doubtful whether paralysis of the soft palate ever occurs in lesions limited to the facial nerve. Paralysis of the palate is most commonly caused by diphtheria, and is indicated by the nasal tone of the voice, and by the regurgitation of liquids through the nose during deglutition. There is usually anæsthesia as well as paralysis in these cases. The soft palate is also affected in cases of bulbar paralysis. The prognosis when due to diphtheria is very good, and complete recovery usually ensues. Iron and strychnine may be given internally, and faradism may be employed, a suitable electrode being used. In bulbar paralysis, the prognosis is very grave. Nervine tonics, such as arsenic, iron and quinine, may be given, and electricity employed. If there is any suspicion of syphilis, iodide of potassium must be administered in large doses.

PARÆSTHESIÆ are perversions of normal sensations, and include such conditions as numbness, tingling, crawling, and pruritus. Visceral paræsthesiæ also exist, such as feelings of

suffocation, faintness, hunger and thirst, etc. The occurrence of numbness of the extremities in alcoholism and in gastric catarrh has been mentioned. In all cases a careful examination must be made, and the cause discovered and removed as far as possible.

PARAGEUSIA.—This term is applied to a perverted condition of the sense of taste. It occurs in neurotic individuals, and is especially met with in hysteria and insanity. The condition may supervene after exposure to powerful and disagreeable odours. It is a very intractable affection, and is rarely benefited by treatment.

PARALYSIS AGITANS.—PARKINSON'S DISEASE, OR SHAKING PALSY.—This affection appears after forty years of age, and affects men especially, though it may affect women also. It usually commences gradually in the muscles of one hand, but occasionally it may begin suddenly, either locally or affecting the whole body. Some time since, I saw a man about sixty years of age, who, twelve years previously, was seized suddenly with tremor of all four extremities, which was continuous during rest. The tremor lasted five years. A few days before I saw him, he was again suddenly attacked with violent general tremor, which quite prevented him from getting about. The affection has continued to the present time. When the onset is sudden, there is usually a history of violent emotion, but

there was none in this case. The symptoms of the affection are tremor, muscular weakness with rigidity, and characteristic facial expression with deformity. The handwriting is typical, the strokes being tremulous and thick. The neck and trunk are rigid, and the head is bent forwards. The gait is awkward, with a tendency to run. In rare cases the tremor is absent. It is difficult to draw the line in some cases between paralysis agitans and senile tremor. But the latter affects the head especially, is often bilateral from the first, and there is no rigidity. Paralysis agitans affects the head slightly if at all, and the disease usually begins in one extremity ; in fact, there may be a monoplegic, hemiplegic, or paraplegic variety, or the affection may be general. The various causes of tremor must be considered and excluded in arriving at a diagnosis, such as toxic tremor from lead, mercury, alcohol, tobacco, tea, etc., neurasthenic tremor and that of multiple sclerosis or of general paralysis, as well as that resulting from the pressure of growths in the brain on the pyramidal tracts. Paralysis is never absolute in paralysis agitans, but towards the end mental failure and bed sores supervene. The disease is very chronic and incurable. Carbonate of iron, chloride of barium, belladonna, and hyoscyamin have been recommended. In all cases rest of mind and body is essential. Hyoscyamin seems to be the most useful drug for checking tremor. One-thirtieth of a grain

may be given by the mouth two or three times a day. It is best, however, to commence with smaller doses. Arsenic and Indian hemp have been of service. Phosphide of zinc may be given in pill form. The subjects of paralysis agitans are apt to suffer from persistent insomnia. This must be met by the administration of nocturnal doses of the bromides, chloral, or Indian hemp. Sulphonal and chloralamide might also be tried. I have found conium absolutely useless in nearly every case in which I have tried it.

PARALYSIS, FUNCTIONAL.—Under this heading we must include such paralysees as hysterical, anæmic, post-epileptic, ideal, malarial, and the variety produced by exhaustion. Ideal paralysis usually follows a trivial injury, and occurs in neurotic subjects. The only thing needed for the cure of such cases is a proper diagnosis. I have immediately cured the three cases I have met with by the application of a faradic current, after assuring the patients that it would cure them at once. Post-epileptic hemiplegia is usually recovered from in a few days, unless the epilepsy depends upon organic disease. Iron and strychnine, with faradisation, hasten recovery. Malarial paraplegia is intermittent, and calls for quinine, arsenic, and strychnine. Anæmic paraplegia occurs especially after childbirth, when there has been great loss of blood. Rest in bed and warmth, with the administration of iron and arsenic, combined with good

food, usually result in cure. Hemiplegia may occur in uræmia; I have seen several such cases which have been cured by a smart purgative, by pilocarpin, or by venesection.

PARALYTIC CHOREA.—Muscular weakness is present in all cases of chorea, sometimes amounting to actual hemiplegia. The foot is dragged and the arm hangs helplessly. The nature of the case is at once disclosed by careful examination. Some jerky movements will be discovered in the hand or other part. Rest in bed is the proper treatment, together with good feeding, seclusion, and the administration of increasing doses of arsenic.

PARALYTIC CONTRACTURE.—This results from paralysis of a group of muscles, their antagonists having their ends approximated, after a time become accommodated to their new position, and contract permanently. Contracture must, as far as possible, be prevented by attending to the position of paralysed limbs, and by faradism or galvanism of the paralysed muscles. In severe cases tenotomy and appropriate mechanical aids are necessary.

PARALYTIC INCONTINENCE.—In all cases of incontinence of urine the bladder must be examined, for the condition frequently results from the overflow of a distended bladder. In such cases systematic catheterisation is necessary, and the bladder must be washed out daily. Strychnine

and electricity are useful. Women often suffer from weakness of the sphincter vesicæ, and pass urine upon coughing, or upon any exertion. In such cases, drop doses of tincture of cantharides are often effectual. In paralysis of the bladder due to disease in the lumbar regions of the cord, cystitis usually quickly supervenes ; it is most important in such cases to see that the catheter used is quite clean.

PARAMYOCLONUS MULTIPLEX.—Nervine tonics, such as iron and arsenic with the bromides, are of use. Morphine must be injected in severe cases. Galvanism is often beneficial.

PARAPLEGIA may be functional or organic in its origin. If the latter, it may be due to cerebral, spinal, or peripheral nerve disease. An instance of cerebral paraplegia is seen in cases of congenital spastic paraplegia, which results from meningeal hæmorrhage and injury to the motor centres for the lower extremities, occurring at the time of, or soon after, birth. The treatment of each kind must be based upon the diagnosis arrived at, and is that for the particular disease present. Amongst functional paraplegias, besides the hysterical, malarial, and ideal forms, are also included reflex and neurasthenic paraplegia. I have a case of spinal neurasthenia at present under my care, where the patient declares that he cannot walk more than a few hundred yards

without getting very tired in the legs, which he can scarcely move after exertion. He tells me that the valerianate of zinc pills I prescribed enable him to walk well, and that he cannot get on without them. Paraplegia may result from over-exertion, such as prolonged standing. Exhaustion paralysis is a well recognised affection. (See page 89.) Cramps and anæsthesia may occur. Rest in bed, with massage and galvanism, and, in severe cases, injections of atropine or morphine, usually suffice for a rapid cure.

PATELLAR TENDON REACTION. — Loss of the knee jerk is a most important sign of organic disease. It is lost in over ninety per cent. of cases of locomotor ataxy. It is also lost in Friedreich's disease, in alcoholic paralysis, in myelitis or meningitis in the lumbar region, and in the late stages of pseudo-hypertrophic paralysis. It is lost also after diphtheria, and occasionally in diabetes. In all lesions of the reflex arc through the lumbar region of the cord, it will be abolished. I have seen it lost in hysterical paralysis, and here it was at once restored by a faradic shock. The treatment must, of course, be directed to the disease present in each case. Strychnine is indicated.

PERFORATING ULCER. — This trophic disorder is usually seen on the under surface of the metatarso-phalangeal joint of the great toe, but it may occur over other parts of the sole of the foot, and in rare cases on the hands. It is usually seen

in connection with locomotor ataxy, and is the result of the peripheral neuritis which is apt to occur in this disease. It may result from peripheral neuritis, apart from locomotor ataxy. Anæsthesia may or may not be present. Rest in bed usually suffices for a temporary cure, but a relapse usually occurs on the patient getting about again. A felt ring should be worn to protect the ulcer from pressure, and the thickened epidermis should be removed by the application of a solution of salicylic acid in glycerine. In cases of chronic neuritis of the sciatic nerve, nerve stretching might prove beneficial. In some cases the sinus leads to diseased bone, and the joints may be destroyed.

PETIT MAL. — This form of epilepsy is usually much more intractable to treatment than the ordinary malady in which convulsion is the prominent feature. In all cases the heart should be examined, for it is often difficult to distinguish between syncopal attacks and attacks of petit mal. (See page 81.)

PHANTOM TUMOUR.—This condition is most commonly observed in the lower part of the abdomen, and is apparently produced by spasm of the diaphragm, combined with relaxation of the recti muscles. In many cases the intestines are distended with flatus, and assist in the formation of the swelling. The condition may simulate advanced pregnancy. Some years ago I was called to see a woman at the infirmary who was supposed to be

in labour. She had had the usual pains, and the abdomen was much enlarged. On percussion, however, I found perfect resonance. The patient was ordered to get up, and told there was nothing the matter. The swelling entirely disappeared, and nothing more was heard of it. A phantom tumour can always be made to disappear by the administration of an anæsthetic. In neurasthenic and hysterical subjects, local tumours may be produced in any part of the body or limbs. They are due to spasm of various muscles, or parts of them, which when contracted form distinct local tumours. The spasm may be tonic or clonic. Weir Mitchell, in his book on diseases of the nervous system, states that he has seen such tumours in the pectoral muscles, but most frequently in the calves. For muscular spasm of this kind, the local injection of atropine is recommended. Faradism or galvanism may also be used with benefit. Nervine tonics and antispasmodics should also be administered.

PHARYNX.—Paralysis of the muscles of the pharynx often occurs from diphtheria. If the paralysis be limited to the superior constrictor muscle, fluids regurgitate through the nose, since contraction of this muscle is necessary to complete the division which the soft palate forms between the buccal and nasal portions of the pharynx during the act of swallowing. Paralysis of the pharynx results also from bulbar disease, and is an important symptom of bulbar paralysis. Basilar

meningitis in the posterior fossa may also produce pharyngeal paralysis, by compression of the vagus and spinal accessory nerves. It occurs also in the terminal stages of progressive muscular atrophy and multiple sclerosis, and may result from syphilis. Treatment should be directed to the cause. Feeding must be done with the stomach tube, and the faradic or galvanic currents may be applied directly to the pharyngeal muscles. The prognosis is good in diphtheritic paralysis, but very grave in bulbar disease.

PHOSPHORUS.—Paralysis in the form of paraplegia may occur in acute and chronic poisoning by phosphorus. Sensory changes are present, and the symptoms are probably due to a peripheral neuritis. In some cases a monoplegia only is present. The treatment consists in the removal of the cause, and in the usual remedies for neuritis.

PIGMENTATION of the skin may occur after severe emotional disturbances, and is often present in exophthalmic goitre. Patches of leucoderma may occur in cases of neuralgia and of peripheral neuritis. The bronzing in Addison's disease may be very slight, and even altogether absent. The treatment is that for the disease present in each case.

PLANTAR NEURALGIA.—I have seen two cases of plantar neuralgia occurring in tramps. Prolonged exertion and gonorrhoeal rheumatism

are the chief causes. Great pain of a neuralgic character is felt in the sole of the foot, which is increased by any attempts at walking. Vasomotor changes are well marked, and the painful area of the foot flushes and perspires freely when it hangs down. The affection may be due to peripheral neuritis. A careful examination must be made for the detection of syphilitic nodes. Rest in bed, with the application of belladonna liniment and the local injection of morphine in severe cases, is necessary. The affection is often very intractable.

PLEURODYNIA. — By some authors this term is made to include pain from any cause occurring in the sides of the trunk. By others it is restricted to intercostal neuralgia. Properly it should be applied to rheumatic myalgia of the intercostal or pectoral muscles. The pain is often intense, and most commonly situated in the left infra-mammary and axillary regions. It is evoked by the slightest movement, a deep inspiration or the act of coughing causing great pain. There is extreme local tenderness. The side should be strapped, and belladonna and chloroform liniments well rubbed in. Internally, iodide of potassium or salicylate of sodium should be given, and in bad cases morphine injections. The act of coughing often causes muscular pains resembling pleurodynia; these are most commonly felt at the epigastrium, but may occur in one or both sides.

In all cases of pain in the side a careful examination should be made to discover the cause. Pleurisy, pneumonia, intercostal neuralgia, aneurism, spinal caries, nodes on the ribs are among the common causes. In pleuro-pneumonia it is common for pain to be experienced at the periphery of the intercostal nerves corresponding to the inflamed lobe. If the lower lobe of the lung be involved, the pain is often severely felt at the lower part of the abdomen. If the upper lobe, then pain is felt over the liver or over the spleen. Such pain may be the only prominent symptom, and may precede the development of any physical signs in the lungs. It is usually, however, attended with high fever, and the onset of the illness has been sudden.

PLUMBISM.—(See page 134.) In all nervous affections it is of great importance to enquire into the occupation of the patient. If there has been exposure to lead in any form, the great probability is that the symptoms are due to plumbism. The absence of the blue line on the gums does not negative lead-poisoning. Iodide of potassium, with sulphate of magnesium, should be given, and the patient removed from all contact with lead.

PNEUMONIA. — Hemiplegia may occur during or after an attack of pneumonia, especially in elderly people, by clotting in atheromatous cerebral arteries, probably induced by the hyperinotic

condition of the blood. Alkalies might possibly prevent this accident. Hemiplegia is more frequent in empyema, especially after injections into the pleural cavities, possibly from detachment of a clot in the heart and resulting cerebral embolism.

POLIO-MYELITIS ANTERIOR ACUTA may occur in children or in adults. (See page 5.) Exposure to cold and damp, over-exertion, and the specific fevers seem to be the chief exciting causes. In the early stages large doses of ergot may be given. In later stages electricity, massage, warmth and nervine tonics are needed. Iron, quinine, cod-liver oil, and phosphorus are the most useful drugs.

POLIO-MYELITIS ANTERIOR SUB-ACUTA: general spinal paralysis of adults.—This is a rare disease, usually affecting adults between thirty and fifty years of age. It may be due to lead-poisoning. The legs are usually first affected and the disease travels upwards, there being paralysis followed by atrophy with the re-action of degeneration. The disease is distinguished from multiple neuritis by the absence of sensory changes. The rule is for recovery to take place, but it is often not complete. Absolute rest in bed and plain food without stimulants are needed. Massage and galvanism are useful, and, in the later stages, various nervine tonics.

POLYDIPSIA occurs in diabetes and occasionally in hysteria. It may also be caused by exhausting illnesses. Acidulated drinks usually give relief.

POLYPHAGIA or BULIMIA is also observed in diabetes and in hysteria. It may be the result of worms, and is common in idiots and imbeciles. A careful regulation of the diet is called for. Bismuth, hydrocyanic acid, creasote and the bromides may be tried.

POLYURIA may occur as an occasional event in hysterical or neurotic individuals. The urine voided is pale, of low specific gravity, and deficient in salts. Valerianate of zinc and the bromides often check the polyuria. In other cases large quantities of urine of low specific gravity are passed daily for considerable time, constituting diabetes insipidus. This disease is a neurosis, and may result from growths in or near the fourth ventricle, from blows on the head, intemperance, mental emotion, hysteria, &c.; or it may be hereditary. I have often found either diabetes mellitus, or diabetes insipidus, associated with melancholia. Diabetes insipidus is apt to commence quite suddenly, and enormous quantities of urine may be passed daily, even as much as forty pints a day. The treatment must be directed to the cause as far as possible. Ergot, pushed with or without belladonna, is often efficacious.

PORENCEPHALUS is the term applied to loss of substance in the brain and cord. The cavity formed is usually filled with serous fluid. The condition may be congenital or acquired, the latter following embolism, hæmorrhage, or injury.

Cerebral porencephalus is often attended with idiocy and hemiplegia, and asymmetry of the skull. No treatment can restore the damaged brain and cord. But something can be done for the resulting paralysis and mental deficiency by proper training, massage, and, if necessary, tenotomy.

POTT'S DISEASE of the spine, or spinal caries, may occur at any age, though it is most frequent in childhood and early adult life. In all cases where pain in the back is complained of, or in which there are pains or paralysis of one or both legs, the spine should be carefully explored. When the cervical region is affected there is rarely much deformity, but the tissues at the back of the neck are indurated, and the head is often flexed. Paralysis is the result of compression and resulting inflammation of the cord, the compression being the result of external pachymeningitis, and very rarely from pressure of displaced bone. Paraplegia is the most common variety of paralysis resulting from spinal caries; but monoplegia may result, and in many cases neuralgic pains and atrophy of groups of muscles on one or both sides are produced by pressure upon the nerve roots. Pott's disease of the spine is often overlooked as the cause of paraplegia, neuralgic pains, and local muscular atrophy. Absolute rest in bed on the back is essential, and may be necessary for many months. In a case in which there was a bed sore, with complete paraplegia as

well as paranæsthesia and cystitis, recovery did not commence till after a three years' rest in bed. It then commenced gradually, but was complete within six weeks. Sayre's jacket may be applied, if rest on the back does not succeed. Extension, also, stands high amongst means of treatment, and suspension has done good. In very obstinate cases the spine should be trephined, and the growth on the outer surface of the dura removed. The patient should be kept on a water bed, and the bladder attended to, being washed out daily if necessary. Bed sores must also be guarded against, and perfect cleanliness is essential. Cod-liver oil and iodide of iron are excellent, and a liberal diet with fats is required. Great benefit is derived from fresh air, and the bed may be moved out into a balcony in warm weather, with great advantage to the patient. In cases of cervical caries, a collar round the neck, made of starched bandage or with plaster of Paris, is of much use ; or a jury mast may be worn ; or the patient may be kept on his back in bed, extension being applied by weights attached to an apparatus fastened round the head, the upper end of the bed being raised. Counter-irritation by the actual cautery is sometimes beneficial.

PREGNANCY. — Many nervous disorders occur in pregnancy. Peripheral paralysis of one sciatic nerve may follow a tedious labour from compression of the nerve by the presenting head,

or it may be due to pelvic inflammation. Paralysis is of common occurrence in the pregnant state, is frequently the result of uræmia, and then disappears as a rule shortly after labour. Cerebral hæmorrhage and embolism may, however, occur. Paraplegia may depend on pressure of the gravid uterus on the branches of the sacral plexus. In some cases myelitis is the cause of the paraplegia. Amaurosis of uræmic origin may also occur. Chorea is a dangerous complication of pregnancy. It must be treated in the ordinary way, and the patient should be kept in bed. If the paroxysms, in spite of arsenic and rest in bed, continue to increase in severity, premature labour must be induced. As a rule the symptoms gradually subside after this procedure, but in some cases the disease progresses and proves fatal. Chloral and the inhalation of chloroform are useful in severe cases. Convulsions occurring during pregnancy are usually uræmic in nature, purgatives and diaphoretics being indicated. Venesection is often at once successful in checking the attacks. Chloral and the bromides may be given internally, and the inhalation of chloroform resorted to when the attacks come on. Pilocarpin has often proved efficacious. I have seen cases in which there was a large amount of albumen in the urine, and in which, after childbirth, all the albumen has disappeared. The convulsions usually occur towards the end of pregnancy and bring on labour themselves,

but in severe cases the latter must be induced. The treatment for paralysis occurring from pregnancy is the same as for that arising apart from this condition. As a rule, the pregnancy should be left to end naturally.

PRIAPISM.—Unnaturally prolonged and persistent erection may be complete or incomplete. When complete it is usually attended with severe pain. Priapism may be the result of reflex irritation from gonorrhœa, constipation, stone in the bladder, &c. It occurs in lesions of the cervical region of the spinal cord, and may be of central origin, as in insanity. It is common in tetanus and in hydrophobia. Free purgation is often beneficial. Camphor, belladonna, hyoscyamin and the bromides are useful. Galvanism applied to the lumbar region of the spine is sometimes efficacious. Morphine and atropine injections may be administered in bad cases. Iodide of potassium has proved successful.

PRIMARY LATERAL SCLEROSIS is a rare disease. Many cases supposed to be instances of this affection are really those of sclerosis, secondary to myelitis. I have seen this disease, and also locomotor ataxy, follow railway injuries and concussions of the spine by falls after long intervals. The disease is chronic and intractable. Suspension is not of much use. Galvanism applied to the spine daily for ten minutes sometimes does good. Turkish baths and hydropathy with massage are most reliable.

Drugs are, generally speaking, useless, arsenic and nitrate of silver being the best. In all cases, absolute rest in bed, is beneficial. Care must be taken in dieting such patients, for they often gain flesh to a great extent, and the increase of weight is harmful. An excess in stimulants or in sexual intercourse is fatal to any chances of recovery. As a rule, however, in these cases there is more or less impotence. In the secondary sclerosis after myelitis, rest is of great importance. I have found much benefit from small doses of iodide of potassium with belladonna, given for a long period.

PROGRESSIVE MUSCULAR ATROPHY.—The treatment of the true malady is very unsatisfactory and often futile. In cases where the disease has followed syphilis, anti-syphilitic remedies must be tried, but they are generally useless. A quiet life, free from mental worry and muscular fatigue, is necessary. Suitable gymnastic exercises and massage may be of use. In all cases the patient should be warmly clad, and should avoid cold and damp. Counter-irritation of the spine by the cautery, or by blisters, should be tried. Arsenic and strychnine are potent drugs, and are best administered hypodermically. Galvanism may be applied to the cervical region of the spine, and the faradic current passed along the muscles. Gentle currents alone should be used. Phosphorus and cod-liver oil are

recommended by some authors. In those forms of idiopathic atrophy which run in families and are distinctly hereditary, prophylactic measures should be taken in the way of systematic muscular exercises, and the avoidance of over-exertion, cold, and other exciting causes.

PROPULSION AND RETROPULSION are terms applied to peculiarities of the gait in paralysis agitans. When the patient starts to walk forwards, he experiences great difficulty in stopping or in turning round, and goes faster and faster till he runs. If he is told to walk backwards he cannot stop himself and falls, unless caught.

PRURITUS, or itching of the skin, is most commonly due to some local irritation from scabies, pediculi, chloasma, or to other skin affections. It is also often caused by jaundice, gout, Bright's disease, diabetes, or may be produced reflexly by irritation in the stomach, uterus, or other viscus. Pruritus may, however, exist as a true neurosis, and is common in old age, apart from any local cause of irritation. It is of frequent occurrence in the pregnant state. Pruritus vulvæ is a very distressing form of the affection. It occurs in neurotic and over-worked women. In all cases the urine should be examined for sugar, and the utmost cleanliness must be observed. I have found great benefit to be derived from boracic acid ointment with cocaine. A drachm of hydrochlorate of cocaine well

mixed with an ounce of the ointment is usually very effective. A solution of perchloride of mercury, two grains to the ounce, is useful, and also the glycerine of subacetate of lead, ung. potass. cyanid., and ung. potass. sulphurat. In all cases the general health must be attended to, and rest from mental work, with change of air, is advisable. Pruritus ani is often associated with hæmorrhoids and threadworms, but in other cases no local cause can be discovered. The same remedies as recommended for pruritus vulvæ may be employed. Wright's liquor carbonis detergens, properly diluted, is often serviceable. Glycerine of borax, and preparations containing prussic acid with sulphur, are of use, and so are vapour baths and pilocarpin in the itching of jaundice or of Bright's disease.

PSEUDO-HYPERTROPHIC PARALYSIS.

—This disease is incurable, but its progress may be retarded by systematic muscular exercise, which leads to true overgrowth of the muscular tissue. Daily walking exercise should be taken, but fatigue must be avoided. Light dumbbells may be used daily. It is of the greatest importance to keep these patients on their feet, for if they take to their beds contracture soon becomes marked, bed sores may form, and the disease rapidly advances. If contracture of the calf muscles has supervened, tenotomy must be performed, and the patient enabled to get about by

appropriate mechanical aids. Gowers has recommended the use of Sayre's jacket for cases in which the spinal muscles are much affected. Massage systematically and daily applied is of service; baths and friction are also of use. The faradic current has been advocated by Duchenne, who is stated to have cured two cases by that means. Drugs are probably of little use. Arsenic, strychnine, phosphorus, cod-liver oil, and Parrish's food are perhaps the best. In all cases the patient must be warmly clad and protected from exposure to cold and wet. The disease usually proves fatal by the supervention of pneumonia, or some other accidental illness. The disease may occur in adults, and may be overlooked in them. I have seen several well-marked cases in both men and women. The same treatment as for the juvenile form must be employed. The disease does not seem to progress so rapidly when it appears for the first time in adult life, and contractions are not of common occurrence.

RACHIALGIA, or pain in the spine, is present in many morbid conditions. In organic diseases of the spinal cord it is by no means a very prominent condition, and not nearly so severe as in cases of spinal irritation. It is marked, however, in inflammation of the spinal membranes, and especially in diseases of the bones, when there is usually tenderness in addition. Pain in the spine occurs in gastric ulcer, in uterine displacements, and occasionally

in affections of the genito-urinary organs. The treatment must be directed to the disease present in each case. A belladonna or menthol plaster often gives relief. Rest in bed may be necessary. Great care must be taken in the application of blisters or other counter-irritants, especially if disease of the cord or membranes is present. Morphine or cocaine may be injected in bad cases. Antipyrin is often useful, and also Indian hemp.

RAILWAY SPINE.—After railway and other injuries to the spine, symptoms of chronic degenerative disease may supervene after an interval of some weeks. The cases may be divided into three classes. In one, the injury causes immediate and severe paralysis; in another, grave symptoms supervene in a few days or weeks, and in the third after an interval of some months. In the two latter forms early symptoms are slight only, or may be altogether absent. The sufferers from railway and other injuries should not be induced to settle their claims too early. I recently saw a case in which locomotor ataxia and later on general paralytic dementia supervened a few months after a railway injury. The man had been in perfect health up to the time of the accident, but had never afterwards been able to attend to business. In a few months he began to complain of shooting pains, and at the end of twelve months was ataxic. He then showed the tremor and inequality of the pupils characteristic of paralytic dementia, and died

eighteen months after the injury. There was no family history of nervous disease, and the man had always been steady and in perfect health. He was persuaded by the surgeon to the railway company to settle his claim a few weeks after the accident, so that his widow had to go unprovided for. In another case a young gentleman was thrown out of a dog-cart. He also was persuaded by the surgeon to an accidental company, who pooh-poohed his injuries, to settle his claim for a few pounds. Within twelve months symptoms of primary lateral sclerosis supervened, and he is now, some years after the accident, suffering from well-marked spastic paraplegia. In all cases after injury to the spine the patient should be kept at rest in bed for some time, and cautioned against over-exertion. It is quite possible that prolonged rest might prevent the onset of chronic degenerative disease following accident. Great injustice is often done to the sufferers from such injuries by the want of knowledge on the part of medical men acting on behalf of railway and other companies. At the same time great care is needed to detect imposture.

RECTUM.—Many disorders of the rectum are met with in hysterical and neurasthenic subjects. Weir Mitchell, in his work on diseases of the nervous system, relates many interesting cases and varieties of rectal trouble in hysterical and neurasthenic women. Neuralgia of the rectum should always lead to a thorough examination for fissure

or piles. It may occur, however, without any obvious lesion to account for it, and may be the prominent symptom in hysteria. Paroxysms of rectal pain with tenesmus may occur in the course of locomotor ataxia, constituting the so-called rectal crises. Suppositories of morphine or cocaine, or the injection of those drugs locally, may be needed in severe cases. Anæsthesia of the rectum, and of the skin about the anus, may also occur in hysteria, and lead to obstinate constipation and over-loading of the lower bowel. Paralysis of the rectum is rare in hysteria, but it may occur without any other symptoms. The sphincter is relaxed and the anus quite patent, it being possible to pass the hand through the sphincter into the rectum, just as in paralysis after injuries or disease of the lumbar region of the cord. Galvanism is useful in these cases, one electrode being passed into the rectum and the other being placed over the lumbar region of the spine. Care must be taken not to injure the mucous membrane. The condition of irritable rectum, corresponding to the irritable bladder, is sometimes met with. The patient complains of diarrhœa occurring very frequently. The motions, however, are usually scybalous and scanty. The condition is very distressing, and there are often much pain and disturbance of general health. At the present time I have a young gentleman under my care who has suffered from this condition for two or three years.

He has been quite incapacitated for work, and dreads going away from home unless accompanied by a relative. The least emotion, or the mere thought of his not being able to get to a closet, will bring on a motion. I found that he wore a towel as a safeguard. In these cases the patient must be assured that there is no disease, and that it is merely a faulty habit, the cure of which rests with himself. An enema once a day to clear out the bowel is of service, and the general health must be attended to if necessary. In such cases, occupation is essential to prevent the patient from constantly brooding over his condition. The opposite condition of deficient action and constipation is more common, and may be due to sensory paralysis of the rectum or to the loss of muscular power, or to the want of coördination of the various muscles engaged in the act of defecation. Many feeble people complain of a feeling of exhaustion after defecation, and this may sometimes amount to actual fainting, especially if the motion is a loose one. In severe cases the bed pan must be used, and the motion passed in the recumbent position, or a little stimulant may be given before the act. In all these troubles, general treatment by nervine tonics, together with regulation of diet and habits, is usually successful, and the patient's attention must as far as possible be withdrawn from the organ at fault.

REFLEX PARALYSIS. — Paraplegia has long been known to occur in connection with diseases of the genito-urinary system. A calculus in the bladder, and irritation set up in the bowel or in other viscera, have been said to cause paraplegia. In some cases, probably the great majority, a myelitis is caused by ascending neuritis spreading up from the nerves of the diseased viscera. In others, the paraplegia is the result of peripheral neuritis of the lumbar and sacral nerves, produced in the same way. In a minority of cases it is possible that the cord and the nerves of the cauda equina are quite healthy, and that the paralysis is the result of pure reflex vasomotor disturbance, or the result of inhibition. A long-standing paraplegia is said to have been cured by the expulsion of worms. Reflex ptosis is well known to occur from irritation of the fifth nerve, and ptosis has followed the extraction of a tooth. The facial paralysis accompanying the cephalic form of tetanus, where the injury occurs in the area of the fifth nerve, is probably of reflex origin. Reflex muscular spasm, such as spasmodic wry neck, facial spasm, and spasm of the eyelids, is well recognised; and may be the result of worms, dental irritation, phimosis, &c. I have twice seen carpopedal contractions, resembling tetany, produced by the passage of gall stones, attended with severe colic. Reflex epilepsy is also recognised, and frequently results from worms in children. Reflex

amblyopia may be produced by irritation of the fifth nerve, there being great contraction of the visual field without obvious changes in the fundus. Reflex neuralgia is also of common occurrence. In all instances of reflex paralysis and spasm the treatment obviously should be directed to the cause. If the case be one of reflex origin, then the disease quickly disappears on removal of the source of irritation.

RESPIRATION.—Sudden lesions, such as hæmorrhage in the region of the respiratory centre in the fourth ventricle, at once arrest respiration. Lesions near the medulla cause irregularity of breathing, which in such cases is of serious import. In coma the respirations become deeper and less frequent. In meningitis and apoplexy Cheyne-Stokes breathing may occur. The pupils often contract during the pause, and the heart's action becomes less frequent. In some cases there is temporary ptosis and loss of consciousness. Cheyne-Stokes breathing is usually of fatal omen when it occurs in the course of brain diseases, but it may last a considerable time. The inhalation of nitrite of amyl sometimes does good. Atropine, strychnine, and nitro-glycerine may be tried.

RESPIRATORY SPASM is common in hysterical subjects. Sobbing, sniffing, hiccough, a hoarse cough, and stridor are often met with in hysteria, chorea, and habit chorea. Rapid breathing frequently occurs, the respiration mounting to

more than sixty a minute, but there is no cyanosis and the pulse is normal. Asafœtida and valerian are of use in these cases, and the application of the faradic current is often at once effectual.

REST is of the utmost importance in many affections of the nervous system. As a rule, absolute rest is necessary for acute diseases, gentle exercise for chronic diseases. The beneficial effects of absolute rest are well seen in grave cases of neurasthenia and hysteria, as employed in the Weir Mitchell treatment. In this treatment the patient is not allowed even to turn over in bed without assistance, nor to feed herself. Rest in bed is highly beneficial in chorea, and is essential in all cases of acute peripheral neuritis. In myelitis and acute diseases of the brain or spinal cord it is also essential. A time comes, however, when it is desirable for the patient to get about; great care must then be used, and the effects of gentle exercise noted. Absolute rest in bed is the treatment for spinal caries, with or without paraplegia. Sciatica is often greatly relieved by rest in bed, and aggravated by walking about. Rest is a recognised method of treatment in locomotor ataxia and lateral sclerosis, but is harmful in pseudo-hypertrophic paralysis. In some cases locomotor ataxia may supervene rapidly, and the patient may be quite unable to stand after a few weeks. In these cases of acute ataxia, much benefit is often derived from prolonged rest in bed.

It is a mistake to suppose that walking or other muscular exercise, except in a moderate degree, is good for neurasthenic and feeble people. It often does much harm. Brain workers, such as busy professional and business men, cannot and ought not to walk much. A little exercise daily is essential, but many people are rendered irritable and exhausted by too much walking. I have found that where little brain work is done, walking exercise is easily borne; but that if brain work has to be done, it is unwise to take any but slight exercise previously. A long walk to business, and a similar walk after a good day's work, are not in all cases to be recommended.

RETENTION OF URINE. — This often occurs in hysteria, but incontinence rarely, if ever, follows, and when it does should lead to a suspicion of organic disease. Retention of urine commonly accompanies lesions of the spinal cord above the lumbar centres, and many other cerebral conditions. In these cases the catheter must be used three or four times daily, and the bladder should be washed out daily, if necessary, with an antiseptic solution. In hysterical retention it is better not to use the catheter more than is absolutely necessary. External faradisation is often all that is needed, together with general management.

RETRACTION OF THE HEAD occurs in basilar meningitis from any cause. It may be due to simple rheumatism of the posterior cervical

muscles, but in these cases there is extreme tenderness of the affected muscles. Retraction of the head, or cervical opisthotonos, is often met with in children as the result of syphilitic basilar meningitis. Tumours or abscesses of the cerebellum may cause either persistent or intermittent retraction. In a case of cerebellar tumour, now under my care, the head is retracted whenever pain comes on, but is quite straight in the intervals. Retraction of the head is also present in tetanus, and is continuous, with paroxysmal exacerbations attended with severe pain. In tetanus it is usual for the patient to complain much of pain in the neck. Retrocollic spasm may be caused by hysteria, or may be produced by functional spasm of the post-cervical muscles, similar to that which occurs in spasmodic wry neck. The treatment to be adopted will, of course, depend upon the disease present in each case.

RHEUMATISM is a potent cause of nervous affections. Hemiplegia, with or without aphasia, may occur in the course of rheumatism from embolism, resulting from rheumatic endocarditis. Cerebral meningitis may be due to rheumatism. In one case of rheumatic hyperpyrexia under my care, meningitis of the convexity of the brain was found at the autopsy. Severe headache and delirium would point to the affection. Hallucinations and choreiform movements occur, but vomiting is usually absent. Paraplegia and acute

rheumatism have been known to set in together, and to recover simultaneously. Spinal meningo-myelitis may be caused by rheumatism. Paralysis of one or other of the ocular nerves has also been observed to occur in the course of an acute attack, and rheumatic neuritis of the peripheral nerves is well recognised. Rheumatic laryngeal paralysis and tetanus are also described. In these cases the treatment should be that for the rheumatic state. Diaphoretics, iodide of potassium, salicin and the salicylates should be prescribed.

RIGIDITY occurring with hemiplegia may be initial, early, late, or structural. Late rigidity is due to descending degeneration of the pyramidal tracts. It may be relieved by placing the limb in warm water, or by warm applications. Massage and frictions are useful, with faradism of the opponents of the contracted muscles.

SACRAL NEURALGIA.—The plexus of nerves over the posterior surface of the sacrum is often affected with neuralgia. Uterine and vesical mischief are common causes of pains referred to this region. Pain in this situation may be due to rheumatic inflammation of the fibrous tissues over the sacrum. The cause must be removed as far as possible. In rheumatic cases, Turkish baths, iodide of potassium, and counter-irritants do good. If constipation be present, purgatives often give much relief. The general treatment for NEURALGIA

must be adopted, and will be found under that heading. Sometimes sacral neuralgia is associated with coccygodynia.

SALAAM CONVULSION, or eclampsia nutans.—This consists in bilateral clonic spasm of the sternomastoid and trapezius muscles. It occurs in children up to the age of puberty, and is paroxysmal. During the attacks the head and neck are bent forwards and then immediately relaxed, the movements being repeated very frequently. In some cases epilepsy and idiocy supervene. Any source of irritation must be removed, and the general health requires attention. Zinc salts combined with the bromides and iron and cod-liver oil are the drugs that give the best results.

SALTATORY SPASM.—This is a rare form of clonic spasm of the legs. As soon as the patient puts his feet on the floor, he is jerked upwards by violent clonic convulsions, and is compelled to hop and jump on the floor. The afflicted individual is quite unable to stand still. In some cases the feet are jerked off the ground; in others the heels are alternately elevated and depressed. There is no paralysis and no anæsthesia, and the patient is quite well in the sitting or recumbent position. The movements may, however, be induced by upward pressure on the soles of the feet. The affection occurs in hysterical and neurasthenic subjects. The general health must be attended to, and the bromides with nervine tonics administered. Galvanism or faradism

may be applied with benefit. I have seen two or three cases of tonic spasm of the calf muscles in hysterical girls, who were obliged to walk on the tips of the toes. These cases were cured by removing them into hospital and applying a faradic current.

SATYRIASIS.—This sexual disturbance occasionally occurs in the early stages of locomotor ataxia, and in general paralysis, and other forms of insanity. The bromides with camphor may be tried.

SCARLET FEVER.—This disease often acts injuriously upon the nervous system. Optic neuritis occurs at times apart from kidney complications. Cerebral hemiplegia may result from thrombosis of a surface vein or from embolism, the result of scarlatinal endocarditis. Infantile paralysis and symptoms resembling multiple sclerosis have been observed to follow the disease. Convulsions occurring during scarlet fever must be checked, for they are especially liable to be continued, and to pass into confirmed epilepsy. In all cases rest in bed for some time is necessary, and iron and cod-liver oil should be given after convalescence, and change of air with rest prescribed.

SCIATICA may be primary when it results from changes in the sciatic nerve or in the blood, or secondary when the symptoms are the result of pressure upon the nerves by growths or inflammatory products. In the majority of cases neuritis

is present. Gout, rheumatism, and syphilis are recognised causes. Over-exertion, and sitting upon hard stools with the legs hanging, are also causes; clerks and business men who sit upon high stools are liable to sciatica, the result of pressure upon the nerve. In all cases, a careful examination of the rectum should be made for the discovery of pelvic growths and foecal masses. The affection is sometimes hereditary. Double sciatica is suggestive of diabetes or of organic disease of the cord, such as locomotor ataxy or malignant disease of the spine, or growths compressing the cauda equina. The knee jerk should not be lost in simple sciatica; and if the reflex be lost in this affection, then the lumbar nerves are also diseased, or the spinal cord is affected. Loss of the knee jerk with sciatica may, however, occur in diabetes. Rest is most important in all acute cases, and the patient should be kept in bed. Hot poultices must be applied, and counter-irritation is of great value. Fly blisters, a series of mustard plasters, or Corrigan's button are very efficacious. Internally, aconite, salicylate of sodium and iodide of potassium may be given with benefit. Morphine, cocaine, or atropine may be injected locally. Acupuncture is often successful. The liniments of belladonna, aconite, and chloroform combined, may be applied. Menthol, in strong solution, is useful. Turkish baths are also of use in acute cases, and flannel underclothing should be constantly worn.

In sub-acute and chronic cases, galvanism may be applied daily; stable currents should be employed, the anode being placed over the sciatic notch and the cathode over the painful points. A feeble current passed through the affected nerve by acupuncture needles, the anode being fixed to the needles, is sometimes efficacious. Thermal baths are of use, and those of Bath or Buxton may be tried. The warm saline baths of Droitwich are efficacious. Many recoveries are said to have followed the use of the baths of Gastein, Teflitz, and Wildbad. In all cases the general health must be attended to, and a diet rich in fat and animal food must be prescribed, except in gouty cases. In the latter, the salts of lithium and potassium with colchicum must be given. In diabetes, appropriate dieting, with morphine or codein, is necessary. Antipyrin relieves pain in many cases. If there be any suspicion of syphilis, iodide of potassium must be given, and pushed together with mercury. Massage should be tried, and forcible flexion of the thigh sometimes does good. In obstinate cases the nerve must be stretched. This procedure, if carefully performed, is free from danger, and has often proved successful. Gelsemium may be tried, though it is not so successful in sciatica as it is in trifacial neuralgia.

SCIATIC NERVE.—Paralysis may affect all the muscles supplied by this nerve, or may be

limited to those supplied by one of its branches. Paralysis of the anterior tibial branch produces the dropped foot, which is so characteristic of alcoholic paraplegia. The paralysis may be the result of neuritis produced by cold, syphilis, or compression, by growths from the bones, or other parts in the neighbourhood of the sacral plexus. Paralysis may also follow cerebral or spinal cord disease. When the nerve itself is diseased, local wasting and trophic changes are observed. The treatment must be directed to the cause present in each case. Counter-irritation, galvanism, and massage are useful. Iodide of potassium should be tried. Spasm of the muscles supplied by the sciatic nerve occurs in hysteria, the flexors of the leg being especially liable to be affected. Spasm of the calf muscles, as seen in ordinary cramp, occurs from many causes. (See page 65.) In certain rare cases tumours in the calves are produced by local muscular contractions, which may come and go or be persistent. Massage and electricity are generally sufficient for their cure. Extension by weights may be necessary, and antispasmodics and atropine injections may be called for.

SCOTOMA.—This term is applied to the condition in which there is a blind patch in the field of vision. It may be caused by opacities in the media, or it may result from affections of the retina or optic nerve. When not due to opacities or retinal

mischief, it is usually the result of excess in tobacco smoking, or in the taking of snuff. It is rarely, if ever, caused by alcohol alone. If taken early, complete recovery follows on the patient giving up smoking; but in very chronic cases, perfect recovery may not ensue, though the patient entirely discontinues the habit. Strychnine may hasten the recovery. Scintillating scotoma is observed in the attacks of migraine.

SCREAMING FITS.—These attacks are common in hysteria, and occur in the nocturnal alarms of overworked children. It is advisable to remove them from school at once, and let them run wild in the country. Bromides and chloral may be given at bed time, but cod-liver oil and iron should also be given for a lengthy period. The attacks in hysteria can usually be checked by the application of the faradic brush.

SEA SIDE.—Rest by the sea is very beneficial for over-worked professional and business men, where there is exhaustion without much irritability. It is contra-indicated if irritability is present, and generally aggravates insomnia. For these symptoms mountainous inland districts are suitable. A sea voyage is also useful for the above class of patients, but is too monotonous for cases of melancholia and mental depression. In nervous exhaustion, without mental symptoms, nothing does so much good as a prolonged voyage on board a comfortable vessel. Epilepsy is often

much benefited by a sea voyage, as is also locomotor ataxy, the enforced rest being very beneficial. Cases of neuralgia should not be sent to the sea side, but to a quiet inland place. A long sea voyage may be tried in dipsomania, and in the cocaine and morphine habits. The patient should be accompanied by a friend, and care must be taken that he has no access to the drug for which he craves.

SENILE CHOREA is to be treated with arsenic and other nervine tonics in the same way as ordinary chorea.

SENILITY.—Many affections of the nervous system occur in the aged. Senile meningitis, atrophy of the brain, chorea, tremor, vertigo, and dementia are well recognised. Apoplexy is exceedingly common in persons advanced in age. The brain atrophies with advancing age, there being a corresponding increase in the quantity of the cerebro-spinal fluid. Old people are liable to attacks of "simple apoplexy," that is to say, after death no evident lesions are present. There is wasting of the brain and excess of fluid, but these are natural processes, and there is no such affection as serous apoplexy. Chorea may occur in the aged: it may be acute or chronic, and last for a few days or weeks, or even for the rest of the patient's life. In many cases it is associated with dementia. It often follows worry or anxiety, and occurs in the subjects of a hereditary tendency to

nervous disease. It usually has no relation to heart disease or to rheumatism. Chorea may be limited to one side of the body, and may be produced by embolism, a true hemichorea being produced. I recently saw such a case in an aged person. Death ensued in a few days in this case. Senile vertigo is of common occurrence. At the Workhouse Infirmary, where there are large numbers of aged people, it is frequently met with, and is the cause of many falls and accidents. Dr. Handfield Jones recommends small doses of perchloride of mercury for the affection. I have found hydrobromic acid useful, but cod-liver oil is of the greatest value in all affections due to senile decay.

SERRATUS MAGNUS MUSCLE.—

Paralysis of this muscle may occur as an isolated affection. The long thoracic nerve which supplies the muscle has an exposed course and is liable to injury where it pierces the scalenus medius. Over-exertion of the shoulder muscles, injuries, and exposure to wet and cold are common causes. When the serratus is paralysed the patient cannot raise the arm above the horizontal line except with difficulty, and when the limb is held forwards in a horizontal position the posterior border of the scapula projects a good deal from the trunk, producing the winged scapula, and is approximated to the spine. Treatment consists in shampooing, massage, and systematic exercises. If rheumatic, hot fomentations may be applied, and

salicylate of sodium, or iodide of potassium given internally. Electricity is also useful.

SEXUAL EXCESS is a potent cause of neurasthenia, hypochondriasis, insanity, general paralytic dementia, locomotor ataxia, and epilepsy. It may also lead to optic nerve atrophy. The act may be followed by fainting, and by peculiar sensations resembling epileptic auræ which may run upwards from the feet or epigastrium to the head, resembling certain disorders that occur in neurasthenic subjects on going off to sleep.

SHOCK depends upon impairment of the functions of the nervous system, the cardiac, respiratory, and vasomotor centres being especially affected, with depression of temperature. It may be produced by violent emotion as well as by severe physical injuries. Death may occur instantly from cardiac inhibition, or in less acute cases from failure of respiration. Breathing must be watched and performed artificially if necessary. The application of a faradic current to the situation of the phrenic nerves in the neck, one pole being placed over the epigastrium, is useful. In rare cases the heart-beat and respiration may be imperceptible, and death may be simulated. The application of a faradic current will at once distinguish the condition, for faradic irritability is lost an hour or so after death. If shock has been produced by hæmorrhage, transfusion may be necessary. In all cases warmth to the head and

trunk is beneficial. Hot water bottles and hot blankets must be applied, and ether or ammonia injected hypodermically. The injection of atropine hypodermically is useful in all cases of shock. If there is much excitement an ice cap may be applied, and the bromides given with care. Digitalis may also be given hypodermically. Syncope is distinguished from shock by being more transient. It may co-exist, however, with that condition. Concussion is a form of shock where the brain is especially affected and the mental faculties are in abeyance.

SINUS THROMBOSIS is a very serious occurrence. It may result from exhaustion produced by diarrhoea, cancer, phthisis, or other debilitating disease. It occurs sometimes in chlorosis and anæmia. The superior longitudinal sinus is the one most commonly affected, and the thrombosis may spread into the veins on the surface of the brain on one or both sides. Œdema occurs about the root of the nose with swelling of the veins. Epistaxis may follow. Headache and somnolence, deepening into coma, with or without hemiplegia, are usually present. Thrombosis of the cerebral sinuses also occurs in connection with disease of adjacent bones, especially those of the ear. The treatment in these cases is surgical. Pyæmia and death frequently result from septic phlebitis and thrombosis of the lateral sinus in old-standing cases of ear disease.

SLEEP.—Disorders of sleep are of common occurrence in neurotic and hysterical people. I have met with over-worked medical men who have complained of a peculiar sensation running upwards from the feet or epigastrium to the head, where it causes a sensation as of a sharp blow or a loud noise. The sensation is at first very alarming, and the dread of it may prevent sleep. It may be checked by the sufferer waking up or turning over. The symptom has been described by Weir Mitchell, and the writer is assured that the condition is a real one. Over-work is a common cause. A dose of bromide of potassium at bedtime will prevent its occurrence. When the sensation reaches the head, the visual, olfactory, or auditory centres may be affected. Excessive smoking and venery are common causes of the condition. The sensations occasionally occur in the waking state. The bromides with strychnine are very efficacious, but in all cases rest, and cessation from faulty habits, are essential. Palpitation and respiratory troubles may also occur at the moment of going off to sleep, in neurotic individuals. In organic disease, such as locomotor ataxia in an advanced stage, death may occur during sleep from failure of respiration. In the waking state the extraordinary muscles of respiration are kept going by volition. When volition ceases death may ensue, especially when there is any lesion near the respiratory centre. Many nervous people are

alarmed by hearing the pulse beat in their ears when lying on their side. Such symptoms are usually relieved by a bromide draught at bedtime, or by taking a cupful of warm milk just before going to bed. NOCTURNAL PALSY and NUMBNESS, and MORNING PTOSIS are described under the appropriate headings.

SMALL POX.—Paralysis, especially in the form of paraplegia, is more common after this than after the other specific fevers, but the peripheral nerves are less frequently affected. Multiple sclerosis, infantile paralysis, and disseminated myelitis have been observed to follow this disease.

SNEEZING (Sternutatio). — Sneezing may occur in paroxysms constituting a neurosis, and is closely allied to hay fever and asthma. Dust of various kinds and exposure to strong sunlight are often exciting causes of the affection. I have many times met with the complaint in business men, whose offices or places of business have been dusty. It may occur in hysteria, or in gout, or may be due to reflex irritation from disorder of the sexual organs. Occasionally there is disease of the turbinate bones or of the mucous membrane covering them, and the nasal cavities should always be explored. Internally, arsenic, belladonna, quinine, and valerianate of zinc, are of use, and the local application of cocaine to the interior of the nostrils often checks an attack. The insufflation of hazeline is sometimes useful.

Iodine or creosote may also be inhaled with advantage. The use of an oro-nasal respirator may check the attacks. In all cases the cause must, as far as possible, be removed. Iodide of potassium given internally, with or without mercury, has proved effectual.

SOFTENING OF THE BRAIN is the result of inflammation, hæmorrhage, or occlusion of vessels. It is especially common in the aged on account of the degenerative condition of the blood vessels. The term, as understood by the laity, means dementia; but, medically and strictly speaking, softening is due to the conditions above mentioned, while in dementia the brain is usually the reverse of soft. The treatment must depend upon the lesion present in each case, being that for cerebral hæmorrhage, embolism and thrombosis respectively.

SOMNAMBULISM.—In this condition the patient, while in an unconscious condition, is able to walk or climb. It is a condition of morbid sleep in which the muscles are brought into activity in response to dream thoughts. I have several times met with sleep-walking in neurotic children overworked at school. It is closely allied to night-screaming and may be cured in the same way. The child must be removed from school. Fresh air and tonics, especially iron and cod-liver oil, are needed, and a bromide and chloral draught may be given at bedtime. In all cases the windows

should be fastened and care taken that the sufferer comes to no harm. Somnambulism may be induced artificially, and forms a phase of the hypnotic stage.

SPINA BIFIDA.—This is due to a congenital arrest of development of the spines and laminæ of one or more of the vertebræ. It usually occurs in the lumbar or sacral region. In rare cases there may be more than one tumour. It is commonly associated with other deformities, and occasionally with hydrorhachis interna, in which case paraplegia and bed sores soon supervene. The tumour is tense and fluctuating; its size may be diminished by pressure and increased by straining efforts, as coughing or crying. A special variety of spina bifida, where there is no external tumour, has been described by Virchow. It has been named spina bifida occulta. It is characterised by an overgrowth of hair over the affected region of the spine, with an absence of the spinous processes of the vertebræ. It is often associated with perforating ulcers of the feet and talipes. The prognosis, in cases of spina bifida, is grave. It is the more serious the larger the tumour, the higher up it is in the spine, and the larger the deficiency in the spinal column. A cure may take place spontaneously by the bones uniting and closing up the deficiency in the spinal canal. The treatment consists in compression and repeated small tapplings. It is essential that only small quantities are drawn off at once, and frequent tapplings are necessary. A

hypodermic syringe is the best instrument to use. Dr. Morton, of Glasgow, injects a solution consisting of ten grains of iodine with thirty grains of iodide of potassium dissolved in an ounce of glycerine. Half a drachm of this solution is injected at intervals of a week or ten days. This mode of treatment has proved successful in many cases.

SPINAL ACCESSORY NERVE. — This nerve consists of two portions, the spinal portion, arising from the cervical region of the cord, being the motor nerve to the trapezius and sterno-cleido-mastoid muscles, and the accessory portion, which arises from the medulla and joins the pneumogastric, being the motor nerve to the larynx. Paralysis may affect both divisions of the spinal accessory nerve, or one only. The accessory portion is paralysed in bulbar lesions, and in the terminal stages of progressive muscular atrophy. It may also be paralysed by the pressure of growths near the medulla. The spinal portion is more liable to injury and pressure from its prolonged course. The treatment must be directed to the removal of the cause present in each case. Galvanism, massage, and systematic exercises are useful for the removal of the paralysis. Spasm of the muscles supplied by the external branch of the spinal accessory nerve may be either tonic or clonic. In cases of tonic spasm, spinal caries and growths should be searched for. Clonic spasm may be uni- or bilateral. Clonic spasmodic wry neck is a serious neurosis which

is often associated with insanity and epilepsy, and occurs in people who have a family history of nervous disease. Over-exertion and exposure to cold are said to be exciting causes of the complaint. It is a very grave and intractable malady, and often ends in insanity. The zinc salts, pushed up to large doses, are sometimes of use. Arsenic and Indian hemp, as well as the bromides and the hypodermic injection of morphine, are also occasionally of service. In severe cases, rest in bed is necessary. Electricity I have never found of much use in this complaint. Stretching of the nerve is often effectual for a time, but as a rule relapse occurs. Neurectomy has resulted in cure.

SPINAL APOPLEXY.—Hæmorrhage into the substance of the cord is a rare and grave occurrence. It is most common between the ages of twenty and forty, and may result from traumatism or may be secondary to myelitis or to tumours, such as gliomata. Premonitory symptoms may occur, such as pain and numbness in the spine, and these are possibly due to congestion. The immediate onset is always sudden, there being loss of motion and of sensation in all parts below the lesion. The reflexes are usually abolished, and bed sores and cystitis occur in severe cases. Hæmorrhage into the cord may be distinguished from meningeal spinal hæmorrhage by the symptoms of irritation always present in the latter affection, such as hyperæsthesia, pains, and spasm,

while paralysis and anæsthesia are not marked. Absolute rest in bed is essential. Chapman's spinal ice-bag may be applied, and in the early stages ergot should be given in full doses. Later on, iodide of potassium may be administered. Massage and electricity can be tried after an interval of some weeks.

SPINAL CONCUSSION.—In this affection the functions of the cord are impaired or abolished as the result of traumatism. If after an injury to the spine weakness of the lower extremities at once supervenes, with or without sensory disorders, all the symptoms disappearing in a few days, it is probable that the case is one of simple concussion. In more severe cases grave lesions probably always exist. An injury to the spine may cause such severe shock that the patient dies in a few hours or days with complete paralysis of motion and sensation ; or severe paralysis, lasting some months or even years, may follow. In other cases, by no means common, there are at first few, if any, symptoms, but after some months signs of degenerative disease of the cord supervene and gradually progress. Locomotor ataxia, lateral sclerosis, or a chronic myelitis may be induced in this way. Absolute and prolonged rest is essential in all cases, and the greatest care must be taken in the regulation of the patient's habits.

SPINAL CORD, ANÆMIA OF.—This condition may be caused by great loss of blood at

childbirth, or by other hæmorrhages, and may be so severe as to cause actual paraplegia. Obstruction of the abdominal aorta above the origin of the lumbar arteries, by an embolon or thrombus, or by compression, causes immediate paraplegia, with anæsthesia and paralysis of the bladder and rectum. Local anæmia may be due to occlusion of the spinal arteries, which is a much rarer occurrence than the corresponding condition in the cerebral vessels. In cases of anæmia and chlorosis, weakness of the legs may be marked, and is probably due to anæmia of the lower end of the cord, the blood supply to this region being carried on with difficulty. Rest on the back in bed is essential, and the head and legs should be raised. Warm water may be applied by Chapman's bags. Internally, iron and strychnine are indicated. Galvanism is useful. Hyperæmia of the spinal cord is said to be brought on by sexual excess, by exposure to cold, or by the sudden cessation of menstrual or other discharges. It causes pains in the spine and sensory disorders in the extremities, but rarely, if ever, leads to paralysis. Its actual existence is purely a matter of speculation. The patient must be kept in bed and made to lie on one side, or on the face, while the legs are kept lower than the body. Purgatives, leeches, ergot, and belladonna are indicated, and Chapman's spinal ice-bag may be applied. No stimulants must be allowed.

SPINAL CORD, TUMOURS OF.—The most common tumours of the cord are glioma, tubercle, and syphilis. Paralysis is soon produced by such lesions, but the exact symptoms will depend upon the situation of the lesion in the cord. In syphilitic growths, iodide of potassium and mercury must be freely given. In tubercular growths, cod-liver oil and iodide of iron are of service. No medical treatment is of avail for other growths. Tumours of the meninges cause symptoms due to irritation of, and pressure on, the spinal nerves, and later on cause compression myelitis. In all cases, iodide of potassium should be tried. If this fail, and if the growth can be localised, the spine should be trephined. It is not rare for an intra-spinal growth to occur simultaneously with a meningeal growth. Such cases should not be operated upon. If profound anæsthesia and bed sores exist, the presence of an intraspinal growth is probable.

STATUS EPILEPTICUS.—This very serious condition may supervene at any time in the subjects of epilepsy. A great number of fits occur in succession, the patient not recovering consciousness between the attacks, and the temperature rising considerably. Death often results from collapse. I have seen the condition produced by excessive drinking in a person not previously subject to fits. Inhalation of chloroform or of nitrite of amyl is useful. Chloral should be given

in fifteen grain doses with thirty grains of bromide of potassium every two hours. If the patient is unable to swallow, the drugs must be injected into the rectum. Drachm doses of chloral in solution may be safely given in the latter way.

STIFF NECK.—This is often due to rheumatism, and is then attended with much tenderness of the muscles and pain on movement. In all cases great care must be taken in making a diagnosis, especially if stiffness has existed for some time, for it may be a symptom of spinal caries, or of a meningeal growth, or due to irritation or paralysis of one spinal accessory nerve.

STOMACH VERTIGO, OR DYSPEPTIC GIDDINESS, is not of very common occurrence. In many cases the attacks of vertigo depend upon labyrinthine disease. True stomach vertigo does exist, and is characterised by occurring after meals. Vertigo often occurs in connection with hepatic disorders and biliousness. Alkalies, such as bi-carbonate of soda with rhubarb or bismuth, are of use. Trousseau recommended alkalies with quassia. The bowels must be attended to and the diet regulated.

STUPOR is partial loss of consciousness. The reflexes are not lost, and the power of swallowing is retained. It is of common occurrence in severe fevers. Ammonia, ether, and other stimulants may be indicated. The bowels must be made to act properly, and the excretion of urine maintained.

Counter-irritation applied to the nape of the neck may be necessary. In all cases the treatment will be regulated by the disease present.

SUNSTROKE, OR INSOLATION.—The symptoms in this affection result from the action of intense heat upon the nerve centres. Three forms are met with: syncopal, asphyxial, and hyperpyrexial. The mortality in all cases is very high, probably over fifty per cent. Sunstroke may cause meningitis or encephalitis. Many of those who recover from the immediate effects are permanently damaged by resulting epilepsy, insanity, headache, blindness, or paralysis. Prophylaxis is of great importance. For the attack, absolute rest in bed, the cold douche, stimulants, and aperients are necessary. Bleeding is not permissible. Later on, iodide of potassium with counter-irritation of the head, and prolonged rest from mental work, are necessary.

SYNCOPE is due primarily to failure of the heart's action, associated with symptoms resulting from anæmia of the brain. Unconsciousness may result, but is rarely deep. The pulse is quick and very feeble, or almost imperceptible, and the face is pallid. Respiration is often affected, being irregular, and attended with sighing. There is no paralysis, and the sphincters are not relaxed, nor are the reflexes lost. The pupils are often dilated, and there is usually great restlessness. As a rule recovery is rapid, there being no mental confusion

or automatism afterwards. It is sometimes difficult to distinguish minor epilepsy from syncope, but in the former the exciting causes of syncope, such as warm rooms and emotional disturbance, are absent. Biting of the tongue, relaxation of the sphincters, mental confusion, or automatism and spasm, are certain signs of epilepsy. The existence of anæmia, chlorosis, and heart lesions would be strongly suggestive of syncope, but epilepsy might occur in the subjects of heart disease. In all cases the cause must be removed. Discharges must be checked, and in severe syncope from loss of blood transfusion may be necessary. It is of great importance to attend to the position of the patient: the head must be kept low, and warmth to the head and body is of great service. Stimulants must be given. The inhalation of nitrite of amyl, and the administration of nitro-glycerine are useful. Ammonia, ether, and digitalis may be injected hypodermically. In anæmic or chlorotic cases, a course of iron and arsenic must be prescribed. Should fainting repeatedly occur in middle-aged men or women, or even in young adults, without any sufficient cause, such as the slightest exertion, Addison's disease should be suspected. I have met with two such cases in which there was no appreciable bronzing, but where the profound asthenia with syncopal attacks sufficed for the diagnosis.

SYPHILIS OF THE NERVOUS SYSTEM.

—Syphilis of the nervous system is one of the most important subjects in the whole range of medicine. It is of high importance, seeing that the vast majority of cases of brain and cord disease occurring in adult life are due to it. It is of the utmost moment to the unfortunate sufferer that his condition be recognised early and treated promptly and energetically, a wrong diagnosis meaning for him either an incurable paralysis or death ; while early recognition of the malady often ensures a complete cure. It seems very remarkable that syphilitic affections of the brain have been recognised only of recent years, considering their great prevalence and marked features. The brain is far more commonly affected by syphilis than the spinal cord or the peripheral nerves ; but there is no part of the nervous system that may not be attacked.

Syphilitic affections occurring in adult life are more frequently the result of the acquired than of the inherited disease ; still, the fact that brain mischief appearing in adult life may be due to inherited syphilis must be borne in mind. In children, inherited syphilis may cause atrophy and sclerosis of the brain, gummatous growths, hydrocephalus, meningitis, and paralysis of the limbs from gummatous inflammation of the peripheral nerves. In fact, there is no known syphilitic lesion of the brain which may not occur in children. Syphilis is a common cause of cervical opisthotonos in children,

due to basilar meningitis. Probably, many of these cases observed in infants, where there has been a history of brain trouble, and the child is brought to us with nystagmus and blindness from optic atrophy, are due to syphilitic basilar meningitis. The specific affections of the nervous system include meningitis and pachymeningitis of the brain and cord ; paralysis of the cranial, spinal, and peripheral nerves, due to gummatous inflammation ; insomnia, sensory paralysis, aphasia, epilepsy, Jacksonian epilepsy, insanity, coma, apoplectic attacks, paraplegia, monoplegia from myelitis or brain disease, acute multiple neuritis leading to a general paralysis, sciatica, and other forms of neuralgia ; possibly, also, general paralysis of the insane and locomotor ataxia. Syphilis undoubtedly predisposes to degenerative diseases of the nervous system.

Paralysis of the Ocular Nerves has long been recognised as a common result of cerebral syphilis, and it was called by Ricord the signature of syphilis on the eye. The third nerve is the one most frequently affected by syphilis, then the sixth, then the facial, but any of the cranial nerves may be involved. The paralysis is almost invariably one-sided ; or, in other words, both nerves of a cranial pair are very rarely simultaneously affected. Ophthalmoplegia, interna and externa, is undoubtedly produced by syphilis, as shown long ago by Hutchinson. Ptosis appearing in an adult,

apart from locomotor ataxia and diphtheria, is almost invariably due to syphilis.

Hemiplegia is common in the subjects of cerebral syphilis, and there appear to be at least three forms. In one the hemiplegia, preceded by severe headache, comes on gradually, and is rapidly cured by iodide of potassium, with or without mercury. There may, however, be several apoplecticform attacks followed by hemiplegia, which recovers spontaneously, but which, if not treated, becomes permanent. These forms of hemiplegia are probably due to compression of the middle cerebral artery by gummatous growth. In another variety the hemiplegia follows attacks of Jacksonian epilepsy, and is due to gummatous mischief in the motor area of the cortex; it is preceded by nocturnal headache, and often accompanied with optic neuritis, and with tenderness upon percussion of the skull over the affected convolutions, and is cured or relieved by anti-syphilitic treatment. In the third form, the hemiplegia, with or without aphasia, supervenes more suddenly, is not preceded by much headache, but is very pronounced and followed by severe rigidity, with marked exaggeration of the reflexes. This variety is due to thrombosis occurring in a diseased vessel, and is not amenable to treatment. It is the most common form met with, and the incurability is due to the fact that, though the diseased vessel may be improved by treatment, the softening that has already taken

place cannot be altered. For this reason sudden syphilitic hemiplegia is less amenable to treatment than gradual and progressive hemiplegia.

Aphasia is a well-known symptom of cerebral syphilis. It may occur with or without hemiplegia and may be either of the motor or the sensory variety.

Epilepsy may result from cerebral syphilis. When due to that condition it usually comes on after twenty, and the attacks are usually preceded by headache, the patient not being well in the intervals. In all cases in which headache is markedly present before an epileptic fit, syphilis should be looked for. The sensory areas of the brain are not nearly so frequently affected as the motor.

Sensory Jacksonian epilepsy is far rarer than motor Jacksonian epilepsy.

It is of great importance to bear in mind that syphilis is a cause of coma, and that the coma may come on suddenly. In some cases it is due to thrombosis of the basilar artery. Dr. Althaus and Dr. Clifford Allbutt have written upon syphilitic coma, and state that recovery frequently ensues under appropriate treatment.

The relation of syphilis to locomotor ataxia is of great interest. In a large proportion of cases of this disease, a clear previous history of syphilis can be obtained, yet they cannot be cured by anti-

syphilitic remedies. Possibly in some rare cases of short duration a rapid cure has been effected, but these were probably due to gummatous mischief about the posterior nerve roots, or affecting the root zones. General paralysis of the insane, acute ascending paralysis, progressive muscular atrophy, and other chronic degenerative diseases of the nervous system frequently follow syphilis. In all affections of the nervous system that disease should be borne in mind, and in all cases in which there is the slightest suspicion of its existence, iodide of potassium should be administered.

In the diagnosis of syphilis of the nervous system, the following points must be borne in mind:—

(1.) No reliance must be placed upon the absence of any history of infection, if the symptoms point to syphilis. In many people the secondary symptoms are very slight, and it is exactly in these cases, and possibly because they have not attracted attention, and have not been properly treated, that syphilis of the nervous system develops. In some cases, however, in spite of early treatment, the disease may in after years affect the nervous system. The length of time that may have elapsed since the primary sore was contracted must not mislead. Cerebral syphilis may occur twenty or thirty years after infection, or, on the other hand, after an interval of a few months only, sometimes even while the patient is suffering

from secondaries. In women, a history of miscarriages is of great importance, and strongly suggestive of syphilis. The presence of characteristic scars on the penis, body, lips, fauces, or perforation of nasal septum must be looked for. The presence of traces of old iritis, keratitis, and of choroiditis disseminata are almost diagnostic. In all cases the fundus oculi should be examined. In the case of a lady, who had severe hemiplegia and contracture, and who had no other symptoms of syphilis, the syphilitic nature of the case was revealed by the presence of choroiditis, though absolutely no history could be obtained from herself or her husband of any infection.

(2.) One of the most characteristic features of cerebral syphilis is headache, almost invariably worse at night; occasionally, however, the pain is present in the day time only. Any persistent headache, which is worse at night, is highly suggestive of syphilis, and urgently calls for iodide of potassium. Such a symptom often precedes paralytic and other serious symptoms. Tenderness on percussion over some part of the skull is often present, the reason of this and of the headache being that syphilitic lesions affect the membranes and surface of the brain. In vascular syphilitic lesions causing hemiplegia there is often no headache.

(3.) Syphilitic lesions are often multiple, anomalous, variable, and unsymmetrical. Paralysis

of a cranial nerve on one side, with hemiplegia on the opposite side, is suggestive of syphilis. Syphilitic hemiplegia, though it may be simple, is often accompanied by paralysis of one or more cranial nerves, for instance, of the third alone, or of the sixth alone.

(4.) Syphilitic disease of the nervous system occurs in adult life, usually between twenty and forty, but may manifest itself at any age. Its subjects have usually a sallow, anæmic, and earthy aspect, though this is not always so. In fact, I have frequently seen cases of undoubted cerebral syphilis, especially in the upper classes, where there was no sign of any cachexia; this muddy appearance is more common among hospital patients than among those who come to our consulting rooms.

(5.) The result of treatment. If the symptoms rapidly yield to anti-syphilitic remedies, it may be taken that a syphilitic lesion is the cause; but the converse does not always hold good, for the disease, though syphilitic, may prove to be entirely intractable, and not to be remedied by iodide of potassium and mercury.

Again, it is frequently observed that in the treatment of cases of cerebral syphilis, improvement occurs up to a certain point, and then the disease remains stationary, without proceeding to complete recovery. In such cases it is possible that the persisting symptoms, remaining after

prolonged and appropriate treatment, may be due to a cicatrix left by a gumma.

TREATMENT.—The two remedies for syphilis of the nervous system are iodide of potassium and mercury, and they must be administered promptly, and in sufficient doses, or irreparable damage may be effected by the syphilitic process. Iodide of potassium cannot be relied upon alone. I have frequently found cases, stationary under the influence of the iodide, quickly recover when mercury has been added. Though undoubtedly iodide of potassium will often cause by itself an entire disappearance of symptoms, yet it is safer to give both drugs. The patient should be brought under the influence of the iodide immediately the diagnosis is made. I usually begin with five grains three times a day, increasing this to ten, and, in a day or two, to twenty, thirty or more grains according to its effects. Regard must be had to the varying tolerance of the drug; some patients are cured with ten grain doses three times a day; others will require four or five drachms of the iodide daily. The iodide, therefore, should be pushed to the dose required to control the symptoms, and the patient must be kept more or less under the influence of the drug for a year or two after the disappearance of symptoms if recurrence is to be avoided.

It is important to remember that large doses of the iodide are occasionally borne better than

small ones. If the patient show great intolerance of iodide of potassium, a single large dose in a tumblerful of water every day might be tried, and should the patient be quite unable to take the drug (a very rare occurrence in syphilis of the nervous system), other iodides, *e.g.*, that of sodium, may be tried. The probability of recurrence of symptoms after discontinuance of the iodide is diminished by the administration of mercury, which may be given by the mouth, by inunction, or hypodermically. Inunction is dirty and annoying to the patient, though highly efficacious. In severe cases I would always recommend inunction of at least a drachm of blue ointment or of Shoemaker's mercurous oleate ointment daily, care being taken to inspect the gums frequently and to wash out the mouth daily to prevent salivation. In all ordinary cases the internal administration of mercury suffices, and I find that the solution of the perchloride of the Pharmacopœia, in drachm doses, added to the iodide mixture (a biniodide of mercury being formed and held in solution), answers perfectly well. Mercury may also be given hypodermically with great effect, but this method is impracticable for people walking about and not under daily medical superintendence. I do not believe in the system of giving very large doses of iodide of potassium for a few weeks and then discontinuing it. I have at the present time patients who have continued their iodide and

mercury mixture for many months and have enjoyed excellent health while taking it. I have seen many cases of syphilis of the nervous system, apparently completely cured, relapse after a longer or shorter interval, to be again relieved by the appropriate treatment; and I think the only safe plan of treatment is to continue the administration of the iodide and mercury for two or three years, giving a dose which does not injuriously affect the patient, and varying it when necessary. Great care should be taken of the general health of those who have contracted syphilis, for it is a well-known fact that any lowering of the health may at once excite an outbreak of tertiary syphilis, though the primary sore may have been contracted many years previously. Even a vigorous treatment of the disease at the commencement does not in all cases prevent the occurrence of affections of the nervous system later on.

TASTE.—Hyperæsthesia, or perversion of the sense of taste, is met with in hysteria. Parageusia, or perverted taste, is observed occasionally in neurotic individuals and in the insane. It may exist as a neurosis in middle-aged neurotic women, corresponding to the condition of dry mouth, described by Dr. Hadden. Alterations in taste occur in cases of peripheral facial paralysis, and in lesions of the fifth nerve. A bitter taste in the mouth is often present in jaundice and in biliousness. In all cases a proper regulation of the

diet is necessary. When the liver is not acting properly, a dose of blue pill and euonymin, with saline cathartics, is necessary. Faradism or galvanism may be applied to the lingual nerve and tongue. A peculiar taste may occur as the aura of an epileptic attack, the centre for taste probably being situated in the temporo-sphenoidal lobe.

TEA in large quantities is a potent cause of nervousness and irritability. Tremor of the arms and legs or of the whole body may occur, and is often very marked. Insomnia is also a result of excessive tea drinking. Tea tasters frequently suffer from gastric catarrh, tremors and debility. The symptoms quickly disappear on discontinuing its use.

TESTIS, NEURALGIA OF.—Neuralgia of the testis is not nearly so common as a similar condition of the ovary. It may occur as a symptom of renal calculus, or result from self-abuse. It may also exist as a pure neurosis. The testicle is extremely sensitive to pressure and painful, vomiting and faintness being usually present. As a rule the affection is unilateral and paroxysmal, the testicle being much retracted during the attacks. The affection is a very severe and intractable one, and may lead to hypochondriasis and insanity. Iron, quinine, arsenic, the bromides, and gelsemium may be tried. In severe cases morphine must be administered hypodermically. Castration has been performed as a last resource.

TETANIC SEIZURES may be produced by lesions of the middle lobe of the cerebellum. Attacks of tonic spasm of the muscles of the neck like those of ordinary tetanus, as well as trismus, may be present. Lesions of the pons may cause similar attacks, with or without trismus.

TETANUS.—This affection is characterised by tonic spasm with exacerbation of a large number of the voluntary muscles, but especially of those of the jaw, neck, back, and abdomen. The spasm may involve all the muscles of the body. It results from wounds, especially when contused. It may follow exposure to cold, childbirth, inflammation of serous membranes, ulceration of the bowels, bed sores, and sometimes appears without any evident cause. Alcoholism seems to predispose to the occurrence of tetanus. I have seen two or three cases of tetanus occurring in drinkers after slight wounds. The mortality of traumatic tetanus is said to be about ninety per cent., that of the idiopathic form about sixty. Tetanus neonatorum may be connected with the severance of the umbilical cord and the resulting wound, but American authors consider that it is frequently the result of forward displacement of the occiput compressing the medulla and pons, and being produced by pressure on the back of the head by the nurse's arm. The symptoms have been removed by placing the child in bed with the head lying on its side. A remarkable variety of

tetanus, which is in my experience common, is the cephalic type. It occurs after injuries to the head or face in the area of the fifth nerve. There is facial paralysis on the same side as the injury, and great difficulty in swallowing. The facial paralysis is supposed to be of reflex origin. I have recently seen two cases of this type, and have heard of a third. Persistent trismus may be caused by hæmorrhage into, or tumours of, the pons. Trismus may be due also to hysteria, but the muscles of the neck are not stiff. In all cases, however, search should be made for a wound, and great care taken in the diagnosis. The intellect is unaffected in tetanus, so that the disease may be easily distinguished from hydrophobia. The patient should be put to bed and kept absolutely at rest in a darkened room. Great care must be taken with the feeding of the patient. If he be unable to swallow, or if the passage of a tube through the nose or mouth cause spasm, peptonised nutrient enemata should be regularly administered. Warm baths often give relief in rheumatic cases. The inhalation of chloroform or nitrite of amyl may be tried for severe paroxysms. The most useful drugs are chloral and the bromides, given in frequently repeated doses, and pushed to their full effect. Chloral combined with opium is also useful. Cases have recovered when kept under the influence of morphine alone. Indian hemp, calabar bean,

conium, gelsemium, and atropine have each been highly recommended. Ice may be applied to the spine, or the ether spray used. Curare may also be administered till general paresis is brought about. Any wound present must be kept clean and aseptic. Nerve stretching, excision of the cicatrix or wound, and amputation have been performed, but have generally failed.

TETANY, OR TETANILLA. — This affection is characterised by paroxysms of tonic spasm, affecting the hand especially, but often the feet as well. The fingers are adducted with extension of the phalangeal and flexion of the metacarpophalangeal joints, being in the position of interosseal flexion. The condition of the hand is indeed pathognomonic of the affection. In rare cases, the muscles of the jaw, larynx, and œsophagus may be affected. When the affection occurs in children, the paroxysms are separated by distinct intermissions, but in adults the spasm is generally continuous. The disease is easily distinguished from tetanus by the peculiar state of the hand, by the intermittent character of the spasm, and by its not involving the muscles of the neck. In tetanus, trismus is an early and constant phenomenon ; in tetany, it is late and rare. The affection is closely allied to carpo-pedal contractions, laryngismus, and general convulsions, and occurs very frequently in children suffering from rachitis. Exhausting conditions, such as

diarrhœa, lactation, etc., exposure to cold, fright, hysteria, and irritation caused by dentition or worms, are further causes. The disease may occur as an epidemic in schools. I have seen tetany supervene upon severe attacks of biliary colic. A remarkable feature of the disease is the presence of what has been called "facial irritability." On tapping the facial nerve, or on scratching the skin over the pes anserinus, the orbicularis, levator anguli oris, and other facial muscles may be observed to contract. The phenomenon, however, is not peculiar to tetany. In this complaint there is also a remarkable increase in the response of the muscles and nerves to electricity. All sources of irritation must be removed. Diarrhœa should be stopped, and in the case of nursing women, the child weaned, and the secretion of milk checked. If rickets be present, cod-liver oil is indicated in combination with Parrish's food, or other preparation of iron. Warm baths are of use. In all cases, the bromides, with chloral, must be prescribed, but they should be accompanied with the administration of tonics, such as iron, quinine, and cod-liver oil. If rheumatism be the cause, salicylate of sodium, with iodide of potassium, is the appropriate remedy. Occasionally the attacks occur at night; a nocturnal variety for which Gowers recommends digitalis. In hysterical cases isolation may be necessary. Tetany occurring after excision of the thyroid is often fatal, but the

prognosis in other cases is usually good. Death has resulted from asphyxia.

THOMSEN'S DISEASE.—(Myotonia congenita.)—In this remarkable disease there is a tendency to tonic spasm of the muscles on attempts at voluntary movement. Muscular action is delayed, and sometimes prevented, by the tonic spasm that ensues the moment an attempt is made to perform any movement. The stiffness passes off with continued exertion, but always reappears after an interval of rest. If the patient tries to rise from a chair his muscles become rigid, and he has difficulty in doing so; if he shakes hands with anyone, he is unable to unclasp his hand for a time. In rare cases, the muscles of the tongue, face, eyes, and even those of mastication and of articulation are affected. The disease is distinctly hereditary, and runs in families. It is possibly also congenital, though it may not show itself till puberty, in this respect resembling Friedreich's disease. There is a remarkable increase in the excitability of the muscles to mechanical and electrical stimulation, the contraction waves being very prolonged. The stiffness is diminished by continuous movement and warmth, and aggravated by cold or by mental excitement. Thomsen, who discovered the disease, and who suffered from it, recommends a life of active muscular exercise. Galvanism may be tried.

THROMBOSIS.—Coagulation in the arteries, veins, and sinuses of the brain is of common occurrence. Disease of the coats of the vessels, retardation of the circulation, and alterations in the blood itself, as in carcinoma, phthisis, chlorosis, and other exhausting diseases, are the common causes. Thrombosis of the surface veins of the cerebrum is apt to occur after the specific fevers, and leads to local softening, with consequent paralysis. It is often extremely difficult to distinguish between thrombosis and hæmorrhage in old people. Wherever there is any doubt, there must be little interference with the patient, the treatment of the two conditions being exactly opposite. Thrombosis calls for stimulants, ammonia, digitalis, and iodide of potassium, with good food. Any cause of exhaustion must, as far as possible, be removed. Thrombosis of the cerebral arteries is often the result of syphilis, and this should be suspected in all cases of hemiplegia in adults below forty years of age. It calls for immediate and energetic treatment by iodide of potassium and mercury. In all cases absolute rest in bed and quietude are essential. The head should be raised, and there should be nothing tight round the neck to interfere with the return of venous blood from the head. Venesection and purgatives are contraindicated.

TINNITUS, or singing in the ears, is often more due to affections of the ear than of the

auditory nerve itself. It occurs as a symptom of Menière's disease, of cerebral congestion, and of anæmia, or may be produced by toxic doses of quinine or of salicin. It may occur by itself as a very distressing and intractable symptom, and it has been known to drive its victims to suicide. The ear should be carefully examined, and any disorders corrected as far as possible. Hydrobromic acid and the bromides may relieve. Galvanism is said to have cured some cases. A gentle current may be passed through the head from ear to ear.

TONGUE.—Paralysis of the tongue occurs in all the varieties of bulbar paralysis, and in lesions outside the pons injuring the hypoglossal nerve. Unilateral paralysis is present in ordinary hemiplegia. The treatment is that of the disease present. In all cases syphilis should be enquired for and, if detected, the usual remedies must be given. Nervine tonics and galvanism or faradism, applied to the tongue by means of an electrode in the form of a tongue depressor with a wooden handle, are of use. Spasm of the tongue occurs in epilepsy and chorea. Spasmodic deviation of the tongue on protrusion may be caused by hysteria, and may be present with or without distinct hysterical convulsions. Spasm may also be caused reflexly by irritation of the fifth nerve, or by other causes. Paroxysmal clonic spasm, with protrusion and retraction of the tongue, may be due to lesions

of the cortical centre of the tongue, and is of the nature of a Jacksonian epilepsy. The bromides are indicated in these cases with the appropriate treatment for any general disease present. If due to cortical lesion, the treatment must be varied accordingly. Trephining may be necessary in obstinate cases.

TORTICOLLIS.—(See page 241.)

TOXÆMIA.—This is a common cause of serious nerve symptoms. Paralysis, the result of peripheral neuritis, is common in cases of alcoholism, and in chronic poisoning by lead, arsenic, copper, and other metals. Delirium, headache, coma, and somnolence frequently result from uræmia. In many cases of chronic uræmia mental symptoms, such as delusions, are present. In uræmic coma convulsions usually occur, but sometimes they are absent and hemiplegia sets in, the case exactly simulating one of apoplexy. Treatment must be directed to the primary disease present, and the cause removed as far as possible.

TRANCE, OR LETHARGY, is a continuous sleep-like condition from which the patient cannot be roused, and which is not due to organic disease or toxæmia. It is usually met with in hysterical subjects, but may be produced in neurotic individuals by exhausting illnesses. It has been observed to follow a severe attack of influenza. Catalepsy may or may not be present, and

occasionally automatism exists. In severe cases death may be simulated, and can only be distinguished by the use of electricity. The points to be attended to are, first, to keep the patient alive by nutrient enemata, or by feeding with a tube; secondly, to rouse him by applications of the faradic brush, along with the administration of asafoetida, valerian, and stimulants; and thirdly, to prevent recurrence by appropriate moral treatment.

TRANSIENT PARALYSIS may occur in the course of locomotor ataxy, frequently affecting the ocular muscles, and, in rare cases, the legs. Temporary paralysis of the third nerve occasionally follows attacks of migraine. Transient paralysis of one or more of the extremities may manifest itself in multiple sclerosis. Transient hemiplegia, after epileptic fits, is of frequent occurrence. Nervine tonics, such as iron, strychnine and arsenic, hasten recovery. Massage and electricity have the same effect.

TRAPEZIUS.—Disease of the spinal accessory nerve causes paralysis of the highest portion of the muscle which descends from the occiput to the acromion. If both muscles are paralysed, the head sinks forwards. It may result from chronic basilar meningitis damaging both spinal accessory nerves. It also sometimes results from disease of the nucleus of the nerve in a late stage of progressive muscular atrophy. Massage and galvanism are of

use. If there be any suspicion of syphilis, the usual remedies must be administered.

TRAUMATIC PARALYSIS.—Paralysis following section or destruction of a nerve, or due to pressure neuritis, is often met with. Contusions, dislocations, the pressure of splints, callus, and crutches upon nerves are common causes of paralysis. Drop-wrist often occurs from compression of the musculo-spiral nerve during sleep. It is apt to occur in states of drunkenness, or by the individual falling asleep with his arm hanging over a chair or resting on some hard substance. Where nerves are divided, if recovery does not ensue, the ends of the nerves, which will be found to be bulbous, must be resected and united. In all cases electricity is of great service, both in the treatment and in the estimation of the severity of the mischief and prognosis. Massage is an important aid to recovery. The local injection of strychnine often does good.

TREMOR may be toxic, due to alcohol, lead, mercury, tea, or tobacco. It may be the result of debility or hysteria, and is sometimes hereditary. It is a prominent symptom of general paralysis, multiple sclerosis, exophthalmic goitre, and paralysis agitans. Senile tremor is well known. Tremor may result from pressure on the pyramidal tracts by growths in the brain, and is a marked symptom in cases of chronic cerebritis. The treatment will depend upon the cause present in each

case. Tremor should always be taken to denote a condition of debility, calling for nervine tonics. Conium, hyoscyamine, and Indian hemp sometimes control this distressing symptom.

TRISMUS.—Spasm of the muscles of mastication may be clonic or tonic. Clonic spasm is observed in epilepsy and chorea. Tonic spasm may be due to tetanus, or may exist by itself as the result of cold, or be due to reflex irritation set up by carious teeth or other morbid condition. Trismus may be caused by hæmorrhage into, or growths of, the pons, or by basilar meningitis. When due to exposure to cold, iodide of potassium and salicine are useful, with galvanism. In all cases the treatment will be based upon the diagnosis arrived at. In chronic cases the jaws may be forcibly separated under an anæsthetic. Hysterical trismus must be treated with the bromides, and requires the treatment usually adopted for hysteria.

TWITCHINGS.—Fibrillary twitchings are produced by contraction of individual muscular fasciculi. They were formerly supposed to be pathognomonic of progressive muscular atrophy, but it is now well known that they occur in many other conditions, for instance, after over-exertion. I have seen them in the glutei muscles of a labourer after much digging; they are often present in atrophied muscles, or in connection with an inflamed joint. They commonly occur in hypochondriasis and neurasthenia, and are aggravated

by attention and anxiety concerning them. Massage, frictions, and galvanism are useful. Indian hemp, small doses of bromides with nervine tonics often cause their disappearance. In all cases, the patient must be reassured and told not to pay any attention to them. Jerky movements, startings, and twitchings are of common occurrence in overworked and nervous people. They are apt to appear just as the patient is dropping off to sleep. They disappear coincidently with an improvement in the general health, reappearing with any fresh worry or impairment of health. A nocturnal dose of the bromides, with nervine tonics and rest, usually suffices for their cure.

TYPHOID FEVER.—The nervous system is profoundly affected in this disease. The tremors occurring during the fever have been known to continue afterwards, and to pass into those of multiple sclerosis. Peripheral neuritis is common after typhoid fever; it may be general, or affect one or more nerves, such as the ulnar, peroneal, or musculo-spiral. In some cases pressure may be the cause of the neuritis. Poliomyelitis anterior acuta is more common after typhoid than after the other specific fevers. The cranial nerves may be affected, and in some cases, the soft palate and larynx. Hemiplegia may result from embolism or from thrombosis. Loss of speech and of memory, imbecility or mania, may also occur, but after a time usually disappear. Iron and quinine, with cod-liver oil and

good diet, are necessary. Electricity, massage, and strychnine are useful for the paralysis.

ULCERATIVE ENDOCARDITIS.—Serious affections of the nervous system are apt to occur in the course of this disease. Hemiplegia resulting from embolism of the middle cerebral artery is of frequent occurrence. In most cases retinal hæmorrhages are present, and have considerable importance from a diagnostic point of view. Aneurisms of the cerebral arteries may also be produced by embolism. At times delirium and coma are prominent symptoms. Treatment is nearly always unavailing, the patient dying sooner or later. Some cases are very acute, others chronic, but in the latter form life is rarely prolonged more than a few months. Sulphocarbolate of sodium combined with digitalis may be tried. Prophylaxis is all-important; the subjects of chronic endocarditis should be cautioned against exposure to cold, intemperance, and excesses of any kind. The laws of hygiene must be strictly obeyed.

UNILATERAL CONVULSIONS.—The spasm may commence in the leg, arm, face, tongue, or with conjugate deviation of the eyes and rotation of the head. The pathology of this form of epilepsy was first recognised by Hughlings Jackson, who, in explaining this attack, was the first to suggest the existence of motor centres in the cerebral cortex. The convulsions are the

result of irritative lesions of the cortical motor centres. Similar attacks result from lesions of the sensory centres, a sensory aura affording the key for localisation. A local meningitis or meningo-encephalitis, gummata, tubercles, cicatrices, spicules of bone, or blood clots may be the irritating agents. In all cases the fundus oculi should be explored, and treatment will depend upon the nature of the lesion present. If the convulsions resist treatment by iodide of potassium with the bromides, as well as by counter-irritation of the skull and the administration of zinc salts or other antispasmodic drugs, trephining must be performed and the morbid centre excised. Unilateral lesions of the spinal cord and hemilateral myelitis are occasionally met with. There is paralysis of the lower extremity on the affected side, with vasomotor paralysis and loss of muscular sense, but hyperæsthesia of other forms of sensation. In the opposite lower extremity there is anæsthesia. Zones of anæsthesia and hyperæsthesia encircling the body exist at the upper level of the lesion. Syphilis is a common cause of hemilateral myelitis, but unilateral pressure, resulting from growths or bone disease, would produce the same symptoms. The treatment is that for ordinary myelitis. Rest is absolutely necessary if spinal caries be present. Non-syphilitic tumours must be removed by trephining.

URÆMIA. — Convulsions, somnolence, coma with or without hemiplegia, headache, vomiting, tremors, and delusions, may be the result of uræmia. Uræmic convulsions usually set in suddenly and occur in groups. They are indistinguishable in themselves from the attacks of ordinary epilepsy. Uræmic coma is usually preceded by drowsiness, but may be of sudden onset, especially when it follows convulsions. Hemiplegia may be present, and the case may exactly simulate one of cerebral hæmorrhage. The onset of uræmic coma may be preceded by severe localised headache, which may be situated over one eye, but is more commonly occipital. In all cases in which the above symptoms occur, the urine should be drawn off and examined, and the fundus oculi explored. Venesection is often at once effectual in checking uræmic convulsions, and in restoring consciousness. Pilocarpin hypodermically and purgatives are of great service.

URETHRAL NEURALGIA.—Attacks of pain in the course of the urethra, occurring in paroxysms, are occasionally observed in locomotor ataxy, constituting urethral crises. Tenesmus is usually present to a painful degree. In all cases stricture, urethritis, calculus or other local disease must be searched for. Warm fomentations, morphine suppositories, or the hypodermic injection of morphine are necessary.

URTICARIA may occur in locomotor ataxy, being associated with the pains, and affecting the same situations. Arsenic is often of service in chronic urticaria.

VERTIGO results from very many causes. It is severe and paroxysmal in Menière's disease, and may occur in affections of the external and middle ear. In all cases of vertigo the ear should be examined. Vertigo is often the result of diplopia from recent ocular paralysis, and occurs in miner's nystagmus. It may be due to cerebral anæmia or congestion, and may result from disease anywhere in the brain. It is, however, especially marked in lesions of the cerebellum. It results from gout, dyspepsia, abuse of alcohol or tobacco, the irritation of worms, chronic cough, and often occurs in Bright's disease. I met with many cases of vertigo following influenza during the recent epidemic. In each case treatment will depend upon the cause, which must be removed. The bromides, ergot, iron, and strychnine are useful where there is atony of the cerebral vessels, and vertigo accompanying sudden movements of the head.

VOMITING may result from disorders of the stomach, from reflex irritation in the throat or elsewhere, from the passage of biliary and urinary calculi, &c., or from central causes. It is a common symptom of cerebral tumours, and of uræmia, and in all cases the fundus oculi must be inspected

and the urine examined. Tumours of the cerebellum are more frequently attended with vomiting than when situated elsewhere in the brain. Persistent vomiting in children may precede other symptoms of tubercular meningitis. Hysterical vomiting may complicate anorexia nervosa. It is to be treated by seclusion from friends, and the use of a tube or of nutrient enemata. The vomiting of pregnancy is often very intractable. Occasionally vomiting, with pain, is a very distressing feature in cases of locomotor ataxia, and may be the cause of death. In these cases morphine hypodermically is the only effectual remedy. Morning vomiting is very characteristic of alcoholism, but it must be remembered that the vomiting of cerebral tumour commonly occurs in the morning, being brought about by changes in the cerebral circulation, induced upon waking, or by the act of rising from the recumbent posture. Treatment will be guided by the diagnosis arrived at. Cerebral vomiting is often relieved by the bromides with counter-irritation of the nape of the neck. Drop doses of ipecacuanha wine, given every half hour, frequently relieve this form of vomiting. In all cases of cerebral tumour purgatives and low diet alleviate such symptoms as headache and vomiting.

WARMTH is useful in all painful and spasmodic affections, and also in cases of pain caused by cerebral or spinal lesions. It may be applied in the form of fomentations of warm water,

hot sand or salt bags, or by Chapman's bags. Corrigan's button is useful in obstinate cases of sciatica, and the actual cautery applied on either side of the spinous processes is often of service in the paraplegia due to spinal caries.

WARNINGS, or the auræ of epilepsy, are of great localising value when they always commence in one limb or when they affect the special senses. The aura may be bilateral and general, or strictly local. It may affect the special senses, the viscera, or the intellect. When the aura starts from one extremity, a ligature or compression above the part often checks the attack. The same result may be produced by painting a ring around the part with iodine or blistering fluid.

WEIR MITCHELL TREATMENT.—This method of treatment is adapted for severe cases of neurasthenia and hysteria. It is very efficacious in obstinate anorexia nervosa, hysterical vomiting, and neurotic dyspepsia. It is contraindicated in melancholia and other forms of insanity, and should not be employed if any grave organic disease be present. It consists in five methods of treatment in association, namely :—strict isolation and seclusion from friends, not even letters being allowed ; absolute rest in bed, massage, electricity, and overfeeding. Dr. Weir Mitchell was the first to use these methods in combination, and he has met with great success from his treatment in the

class of cases above mentioned. The massage and electricity obviate the evil effects of prolonged rest and overfeeding. In severe cases of hysteria, removal of the patient from home is absolutely essential, and strict isolation is the most important factor in the treatment. A good, cheerful nurse must be employed; and if the patient does not progress, a fresh nurse should be obtained. For full particulars of the treatment, the reader may consult the work of Dr. Weir Mitchell on "Fat and Blood," or that of Dr. Playfair on "The Systematic Treatment of Nerve Prostration and Hysteria."

WRIST-DROP is most commonly caused by plumbism or by alcoholic neuritis. It may occur in progressive muscular atrophy or from pressure, as by crutches, on the musculo-spiral nerves. It often results from pressure on the nerve by the individual making a pillow of his arm against a hard substance. The cause must be removed in all cases. Iodide of potassium, massage, and electricity are of use.

WRY NECK.—(See page 241.)

POSOLOGICAL TABLE.

- cetanilide. *Syn.* Antifebrin.—2 to 10 gr.
- Acidum Arseniosum.**— $\frac{1}{60}$ to $\frac{1}{12}$ grain. For hypodermic use the *Liquor Sodii Arseniatis* should be employed, being less irritating in its local effects than Fowler's solution.
- „ **Benzoicum.**—3 to 15 gr.
- „ **Boracicum.** *Syn.* Boricum.—5 to 30 gr.
- „ **Carbolicum.**—1 to 3 gr.
- „ **Gallicum.**—2 to 20 gr.
- „ **Hydrobromicum Dilutum.**—20 to 60 m.
- „ **Lacticum Dilutum.**—30 to 120 m.
- „ **Osmicum.**—A one per cent. solution in water is used, the dose being 2 to 10 minims hypodermically.
- „ **Phosphoricum Dilutum.**—10 to 30 m.
- „ **Salicylicum.**—5 to 30 gr. or more.
- „ **Scleroticum.**—The most active principle of ergot. The dose hypodermically is $\frac{1}{2}$ to 1 gr. or more.
- „ **Sulphuricum Aromaticum.**—5 to 30 m.
- „ „ **Dilutum.**—5 to 30 m.
- „ **Sulphurosum.**—30 to 60 m.
- „ **Tannicum.**—2 to 10 gr.
- Aconitina.**— $\frac{1}{240}$ to $\frac{1}{60}$ of a grain of Morson's preparation. The dose may be carefully increased up to $\frac{1}{24}$ of a grain. The drug may be given hypodermically in half these doses.
- Aether.**—20 to 60 m.
- „ **Aceticus.**—20 to 60 m.
- „ **Sulphuricus.**—20 to 60 m.
- Ammoniacum.**—10 to 20 gr.

Ammonii Benzoas.—10 to 30 gr.

„ **Bromidum.**—2 to 20 gr.

„ **Iodidum.**—3 to 20 gr.

Amyl Nitris.— $\frac{1}{6}$ to 1 minim by mouth; 2 to 5 minims by inhalation.

Analgesine.—See Antipyrin.

Antimonium Sulphuratum.—1 to 5 gr.

„ **Tartaratum.**— $\frac{1}{16}$ to $\frac{1}{6}$ gr. as a Diaphoretic;
 $\frac{1}{6}$ to 1 gr. as a Depressant; 1 to 2 gr. as an Emetic.

Antipyrin.—5 to 30 grs. It may be injected hypodermically, but sometimes causes pain when thus administered.

Apomorphinæ Hydrochloras.— $\frac{1}{16}$ to $\frac{1}{4}$ gr. by the mouth;
 $\frac{1}{25}$ to $\frac{1}{10}$ gr. hypodermically.

Argenti Nitras.— $\frac{1}{6}$ to $\frac{1}{3}$ gr.

„ **Oxidum.**— $\frac{1}{2}$ to 2 gr.

Arsenic.—White, $\frac{1}{60}$ to $\frac{1}{12}$ gr.

Arsenii Iodidum.— $\frac{1}{30}$ gr.

Arsenious Acid.— $\frac{1}{60}$ to $\frac{1}{12}$ gr.

Asafoetida.—5 to 20 gr.

Atropina.— $\frac{1}{120}$ to $\frac{1}{60}$ gr.

Atropinæ Sulphas.— $\frac{1}{120}$ to $\frac{1}{40}$ gr.

„ **Valerianas.**— $\frac{1}{120}$ to $\frac{1}{40}$ or $\frac{1}{16}$ gr.

Auri Bromidum.— $\frac{1}{60}$ to $\frac{1}{5}$ gr,

„ **et Sodii Chloridum.**— $\frac{1}{30}$ to $\frac{1}{2}$ gr.

Barium Chloride.— $\frac{1}{4}$ gr.

Beberine, Hydrochlorate of.—1 to 10 gr.

„ **Sulphate of.**—1 to 10 gr.

Berberina.—2 to 5 gr.

Bromide of Ammonium.—2 to 20 gr.

„ **Iron.**—3 to 10 gr.

„ **Lithium.**—5 to 15 gr.

„ **Potassium.**—5 to 30 gr.

„ **Sodium.**—5 to 30 gr.

„ **Zinc.**—3 to 10 gr.

Brucine.— $\frac{1}{12}$ to $\frac{1}{2}$ gr.

Butyl-Chloral Hydras.—2 to 15 gr.

Caffeina.— $\frac{1}{2}$ to 5 gr.

Caffeinæ Citras.— $\frac{1}{2}$ to 5 gr.
 „ **Hydrobromas.**— $\frac{1}{2}$ to 5 gr.
 „ **Valerianas.**— $\frac{1}{2}$ to 5 gr.
Caleii Chloridum.—10 to 20 gr.
 „ **Hypophosphis.**—1 to 6 gr.
 „ **Sulphidum.**— $\frac{1}{10}$ to 1 gr.
Calomel.—1 to 5 gr.
Calx Sulphurata.— $\frac{1}{10}$ to 1 gr.
Camphor.—1 to 10 gr. Spiritus Camphoræ, 10 to 30 m.
Camphora Monobromata.—2 to 10 gr.
Cannabina.—1 to 5 gr. daily.
Cannabis Indica.—Extractum, $\frac{1}{6}$ to 1 gr.; Tincture, 5 to 20 m.
Cantharides.— $\frac{1}{6}$ to $\frac{1}{2}$ gr. in pill; Tincture, 5 to 20 m.
Capsicum.— $\frac{1}{4}$ to 1 gr. in pill; Tincture, 3 to 20 m.; Capsicin,
 $\frac{1}{10}$ to $\frac{1}{4}$ gr. in pill.
Carbolic Acid.—1 to 3 gr.
Cerii Oxalas.—1 to 2 gr.
Chloral Hydras.—5 to 30 gr.
Chloralamide.—15 to 45 gr.
Cimicifugin.—1 to 6 gr.
Coca.—30 to 120 gr.
Cocainæ Hydrochloras.— $\frac{1}{6}$ to 1 gr.
 „ **Salicylas.**— $\frac{1}{5}$ to 1 gr.
Cocaine.— $\frac{1}{8}$ to 1 gr.
Codeina.— $\frac{1}{4}$ to 2 gr.
Colehiein.— $\frac{1}{32}$ to $\frac{1}{16}$ gr.
Conina.— $\frac{1}{4}$ gr.
Coninæ Hydrobromas.— $\frac{1}{4}$ to 2 gr.
Creasotum.—1 to 3 m.
Croton-Chloral Hydrate.—2 to 15 gr.
Cupri Sulphas.— $\frac{1}{4}$ to 2 gr.
Daturina.— $\frac{1}{120}$ to $\frac{1}{16}$ gr.
Daturinæ Sulphas.— $\frac{1}{120}$ to $\frac{1}{16}$ gr.
Dialysed Iron.—10 to 30 m.
Digitalinum.— $\frac{1}{60}$ to $\frac{1}{30}$ gr.
Donovan's Solution.—5 to 15 m.
Dover's Powder.—5 to 15 gr.

- Duboisinæ Sulphas.— $\frac{1}{120}$ to $\frac{1}{60}$ gr.
- Emetin (Extractive) Expectorant.— $\frac{1}{60}$ to $\frac{1}{6}$ gr.
- Emetic.— $\frac{1}{2}$ to 1 gr.
- Ergotinine.— $\frac{1}{100}$ gr.
- Ergotinum.—1 to 3 gr.
- Eserinæ Hydrobromas.— $\frac{1}{60}$ to $\frac{1}{20}$ gr.
- „ Salicylas.— $\frac{1}{60}$ to $\frac{1}{20}$ gr.
- „ Sulphas.— $\frac{1}{60}$ to $\frac{1}{20}$ gr.
- Exalgine.— $\frac{1}{2}$ to 1 gr.
- Extractum Aconiti.— $\frac{1}{4}$ to 1 gr.
- „ Belladonnæ.— $\frac{1}{6}$ to 1 gr.
- „ Cannabis Indicæ.— $\frac{1}{6}$ to 1 gr.
- „ Cimicifugæ Liq.—5 to 30 m.
- „ Cinchonæ Liq.—5 to 30 m.
- „ Cocæ.—5 to 15 gr.
- „ Cocæ Liquidum.—1 to 4 dr.
- „ Conii.—2 to 6 gr.
- „ Damianæ Liquidum.—1 to 2 dr.
- „ Ergotæ Liquidum.—10 to 60 m.
- „ Gelsemii Alcoholicum.— $\frac{1}{4}$ to 2 gr.
- „ Grindeliæ Liq.—10 to 30 m.
- „ Hyoseyami.—2 to 10 gr.
- „ Jaborandi.—2 to 10 gr.
- „ „ Fluidum.—10 to 60 m.
- „ Nucis Vomicæ.— $\frac{1}{8}$ to 1 gr.
- „ Opii.— $\frac{1}{2}$ to 2 gr.
- „ „ Liq.—10 to 40 m.
- „ Physostigmatis.— $\frac{1}{16}$ to $\frac{1}{4}$ gr.
- „ Stramonii.— $\frac{1}{4}$ to $\frac{1}{2}$ gr.
- Ferri Arsenias.— $\frac{1}{16}$ to $\frac{1}{2}$ gr.
- „ Bromidum.—3 to 10 gr.
- „ Hypophosphis.—1 to 5 gr.
- „ Iodidum.—1 to 5 gr.
- „ Lactas.—2 to 10 gr.
- „ Phosphas.—2 to 10 gr.
- Galbanum.—5 to 15 gr.
- Gelsemina.— $\frac{1}{60}$ to $\frac{1}{20}$ gr. Tinctura Gelsemii, 5 to 20 m.

Gelseminæ Hydrochloras.— $\frac{1}{60}$ to $\frac{1}{20}$ gr.

Guarana.—10 to 60 gr.

Guaranine.— $\frac{1}{2}$ to 5 gr.

Hamamelidin.— $\frac{1}{4}$ to 2 gr.

Homatropinæ Hydrobromas.— $\frac{1}{120}$ to $\frac{1}{30}$ gr.

„ **Hydrochloras.**— $\frac{1}{120}$ to $\frac{1}{30}$ gr.

„ **Salicylas.**— $\frac{1}{120}$ to $\frac{1}{20}$ gr.

Hydrargyri Iodidum Rubrum.— $\frac{1}{32}$ to $\frac{1}{8}$ gr.

„ „ **Viride.**— $\frac{1}{6}$ to 3 gr.

„ **Perechloridum.**— $\frac{1}{16}$ to $\frac{1}{8}$ gr.

„ **Subchloridum.**— $\frac{1}{2}$ to 5 gr.

Hydrobromic Acid, diluted.—20 to 60 m.

Hyoseinæ Hydrobromas.— $\frac{1}{200}$ to $\frac{1}{100}$ gr. or more.

„ **Hydrochloras.**— $\frac{1}{300}$ to $\frac{1}{100}$ gr.

Hyoseyamina.— $\frac{1}{120}$ to $\frac{1}{40}$ gr. In mania, $\frac{1}{16}$ to $\frac{1}{8}$ gr., or even 1 gr. $\frac{1}{20}$ to $\frac{1}{10}$ gr. may be administered hypodermically.

Hyposulphite of Sodium.—10 to 60 gr.

Iodide of Ammonium.—3 to 20 gr.

„ **Arsenium.**— $\frac{1}{30}$ gr.

„ **Potassium.**—2 to 10 gr.

Iodoform.— $\frac{1}{2}$ to 3 gr.

Jaborandi.—5 to 60 gr. ; Extractum, 2 to 10 gr. ; Tinctura, 30 to 60 m. ; Infusion, 1 to 2 oz.

Kairine.—5 to 15 gr.

Lactate of Iron.—2 to 10 gr.

„ **Quinine.**—1 to 5 gr.

„ **Zinc.**—3 to 30 gr.

Liquor Arsenicalis.—2 to 8 m.

„ **Arsenici Hydrochloricus.**—2 to 8 m.

„ **Arsenii et Hydrargyri Iodidi.**—10 to 30 m.

„ **Sodii Arseniatis.**—5 to 10 m.

„ **Strychninæ Hydrochloratis.**—2 to 10 m.

Menthol.— $\frac{1}{2}$ to 2 gr.

Monobromated Camphor.—2 to 10 gr.

Morphinæ Acetas.— $\frac{1}{8}$ to $\frac{1}{2}$ gr. The dose of the Sulphate and Hydrochlorate is the same.

Moschus.—5 to 10 gr.

Nitro-glycerine.— $\frac{1}{200}$ to $\frac{1}{50}$ gr. ; of the one per cent. solution
the dose is $\frac{1}{2}$ to 2 m.

Oleum Phosphoratum.—1 to 4 m.

Osmic Acid.—1 p. c. sol. 1 to 3 m. hypodermically.

Paraldehyde.—15 to 60 m.

Phosphorus.— $\frac{1}{200}$ to $\frac{1}{40}$ gr.

Physostigmina.— $\frac{1}{100}$ to $\frac{1}{50}$ gr.

Pilocarpinæ Hydrochloras.— $\frac{1}{20}$ to $\frac{1}{2}$ gr.

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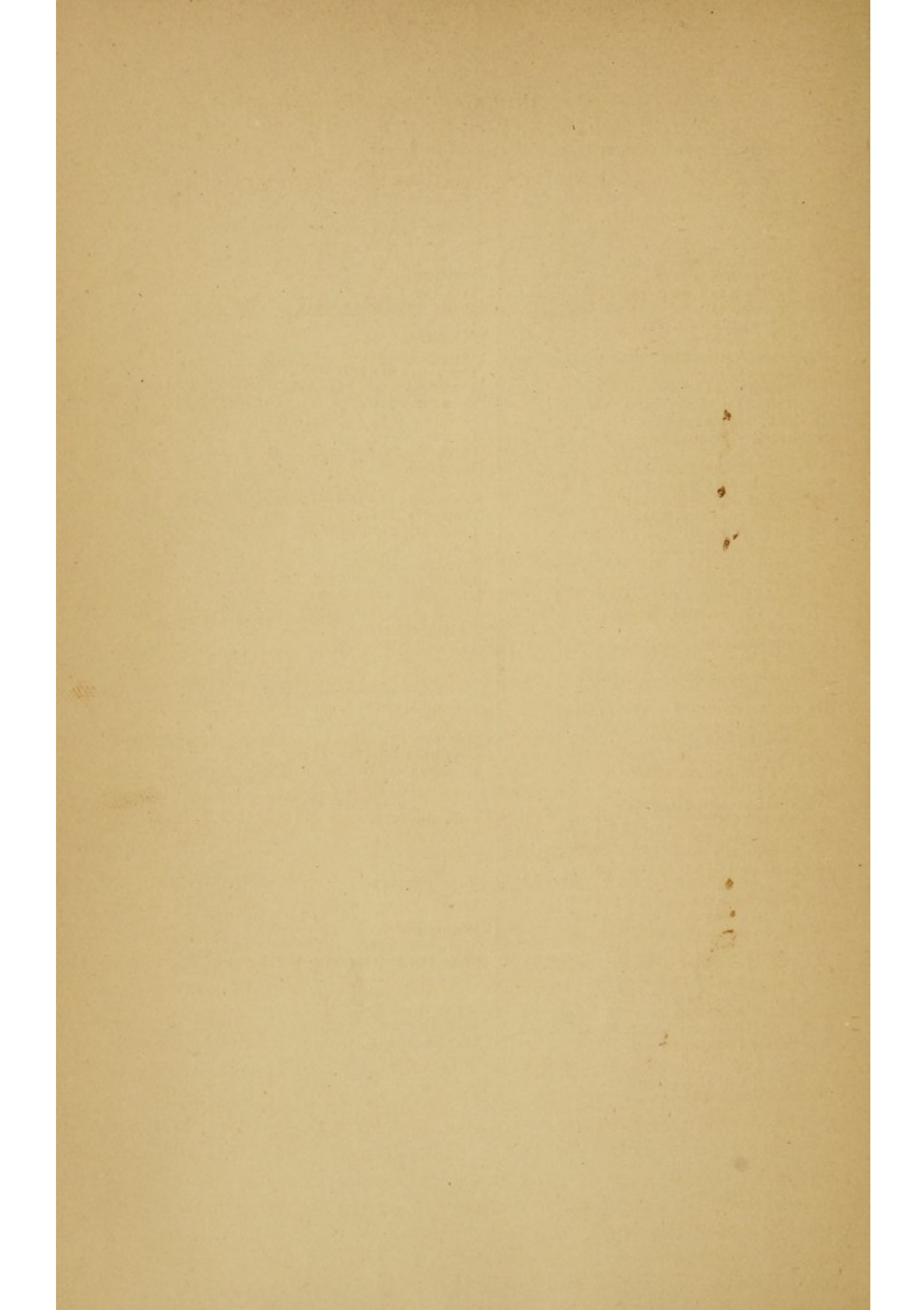
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EPILEPSY OR FALLING SICKNESS.

BY C. W. SUCKLING, M.D., LOND., M.R.C.P.

Consulting Physician to The Queen's Hospital, Birmingham, etc.

From Dr. Suckling's valuable paper we publish his views on the treatment of this disease :

I believe that if every case was properly treated from the commencement, in the great majority of cases a cure would result. After the first fit the patient should be under medical superintendence for at least two years, and should take the bromides for that time, and should have the general treatment necessary. The difficulty is that the people have not the patience to continue the treatment.

Medicinal Treatment.—The bromides still hold the field as the most useful drugs. The prescription I usually give to an adult is the following :

℞ Potassii bromidi.....	x gr.
Ammonii bromidi.....	x gr.
Tinct. bellad.....	x ℥.
Aq. menth. pip.....	℥ j.

Two tablespoonfuls to be taken on getting into bed, and one tablespoonful to be taken before rising in the morning.

This mixture may be increased or diminished as necessary. It is best to give the medicine in this way, for the patient does not feel the worry of taking it, as he would if he had to take it in the daytime. The medicine should be continued for at least two years after the fits have ceased. The dose has to be increased or diminished till the minimum quantity necessary to control the attacks is found. I have many times found that the omission of a single dose has caused an attack. The larger dose is best given at night so that its effects wear off towards the morning, and the patient is not sleepy all day. I have known patients take this medicine for years without the slightest ill effect. If there is heart disease the belladonna should be replaced by digitalis. If the bromide mixture fails, borax may be tried, or ergot. In very obstinate cases iodide of potassium should be tried. Bromide of strontium has not in my experience been so useful as the bromides of potassium and ammonium. Arsenic is of no use in epilepsy. I have found that the addition of this drug for acne will bring on the attacks, and iron also does the same. I have met with two or three cases of epilepsy with a slow pulse (forty to fifty) and have found the attacks cease with the bromides combined with trinitrin.

Where the bromides have failed I have also found the zinc salts useless. In some cases the addition of a small dose of tincture of opium instead of the belladonna has done good. I have asked a friend of mine, Dr. Rutherford of the City Asylum, Exeter, how he treats cases of status epilepticus, and he writes that he has only lost one case during the last few years; before that most of them died. He clears the bowels with a large enema, and then injects one-hundredth of a grain of hydrobromide of hyoscine. If the convulsions are not better one-fiftieth of a grain an hour later is injected. After that he is guided by the condition of the patient, but more than two injections are rarely needed. The hyoscine used is procured direct from Merck, of Darmstadt. Dr. Rutherford thinks that most of the failures are due to using the so-called tabloids, which he considers are quite untrustworthy.

The general treatment in epilepsy is of the greatest importance, and unless this is properly carried out medicinal treatment is useless.

In the attack the patient should not be interfered with, except that biting of the tongue should be prevented by a piece of india-rubber wrapped in a handkerchief, the head should be placed on one side, and care should be taken that the patient does not injure himself against articles of furniture, or turn over on his face. Epileptics should not be allowed to climb ladders, or to bathe, or even to get into a bath. On more than one occasion I have known death to occur in a bath. Especial care should be taken in cases of procursive epilepsy that the patient is kept on the ground floor. After an attack it is best to leave the patient alone and let him sleep. Care must be taken to empty the mouth with a spoon when an attack comes on at meal times.

A quiet life free from mental excitement is necessary, and cold sponging or the application of cold water to the head does good.

In all cases where there is a local aura it is important to abort the attack if possible by a ligature, or a handkerchief, or a piece of tape applied round the limb; and the attack may sometimes be aborted by forcibly opposing the contraction of the muscles that are first convulsed. I have occasionally met with patients who by a great effort of will-power have been able to stop the onset of a fit. Daily outdoor exercise, short of fatigue, and a moderate amount of mental work are necessary. It is a mistake to keep epileptic children altogether away from school. I find that they are much better for a few hours' instruction daily. At the same time their lessons must not be made a worry to them, and should be of moderate duration. Tea or coffee should be taken sparingly. Epileptic patients should be advised

not to marry, except in rare instances where the fits have only occurred at intervals of years. A young lady under my treatment had had no fits for two years, and then they began again. I discovered the cause to be that she had just become engaged to be married. An epileptic should not be allowed to carry a gun. Dancing, swinging, and romping are bad. I have mentioned the case of a little boy who always has fits after eating walnuts. I saw recently a middle-aged man who occasionally had severe attacks of cramp in the legs and very painful extension of the great toe; he had to jump out of bed and rub the parts to get relief. I found that these attacks always followed his eating walnuts. Children who have had eclampsia in infancy, or who come of a neurotic family, should be brought up most carefully; they should be properly kept in order, and should be brought up for an occupation which is suitable to them, which shall be free as far as possible from worry or excitement. I cannot give an accurate estimate of the number of cases not cured, cured, relieved or not relieved, for in a large majority of cases the patient desired only an opinion and a prescription, and I did not see him again. But I am surprised at the number of cases that I have found to be cured at the end of some years. One gentleman whom I saw ten years ago recently brought his wife to see me; he had taken medicine for three years, but for seven years he had had no attacks. His attacks always occurred on getting out of bed in the morning. After the fits had ceased he had occasionally what he called shocks in the morning.—*Birmingham Medical Review*.

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, J. FERGUSON, T. McMAHON, H. J. HAMILTON,
AND INGERSOLL OLMSTED.

The Nosology of the So-Called Functional Diseases.

Drs. Joseph Collins and Joseph Fraenkel, of New York, in *Med. Record*, June 17th, claim that these diseases are due to disturbances in the sympathetic nervous system, either as centrally represented in the brain and cord, in its ganglia, or in its peripheral nerves. The diseases that they include under the term functional for the purposes of their paper, are insanity without gross lesion, epilepsy in all its varieties, hysteria and allied conditions, the neurasthenic state, migraine, angio-neurotic edema, asthma, non-pancreatic diabetes mellitus and insipidus, Graves' disease, rheumatism, rheumatoid arthritis, arthritis deformans, arterio-capillary fibrosis, pathological obesity. They contend that these diseases are better explained on the basis of disease or derangement of the sympathetic nervous system than any other assumption. They all have a common feature of heredity, degenerating and influenced by surroundings. A striking feature of the functional diseases is their mode of onset. This is almost invariably insidious. The patient can give but little information as to the initial phenomena. In the case of organic, the reverse is the case. In these, the patient can tell in most cases the very day the trouble began, and point out the initial phenomena. In the case of functional disorders the patient's language is inadequate to describe all his ills; whereas, in the organic diseases, the patient states his case in a few words and usually makes light of his trouble. Then again, in the matter of treatment there is a feature in common to all the functional diseases. The patient's strength must be improved in all cases. The vegetative system must be attacked. This does not mean that the acidity of the blood in rheumatism should not be lessened, or that the nasal membrane should receive no attention in asthma; but behind all this there lies a weakness that requires long-continued toning.

The Treatment of Abdominal Palpitation.

Sir Willoughby Wade, *Brit. Med. Journal* for June 17th, relates his experience with the above affection. He expresses the opinion that it is caused by an excessive accumulation of

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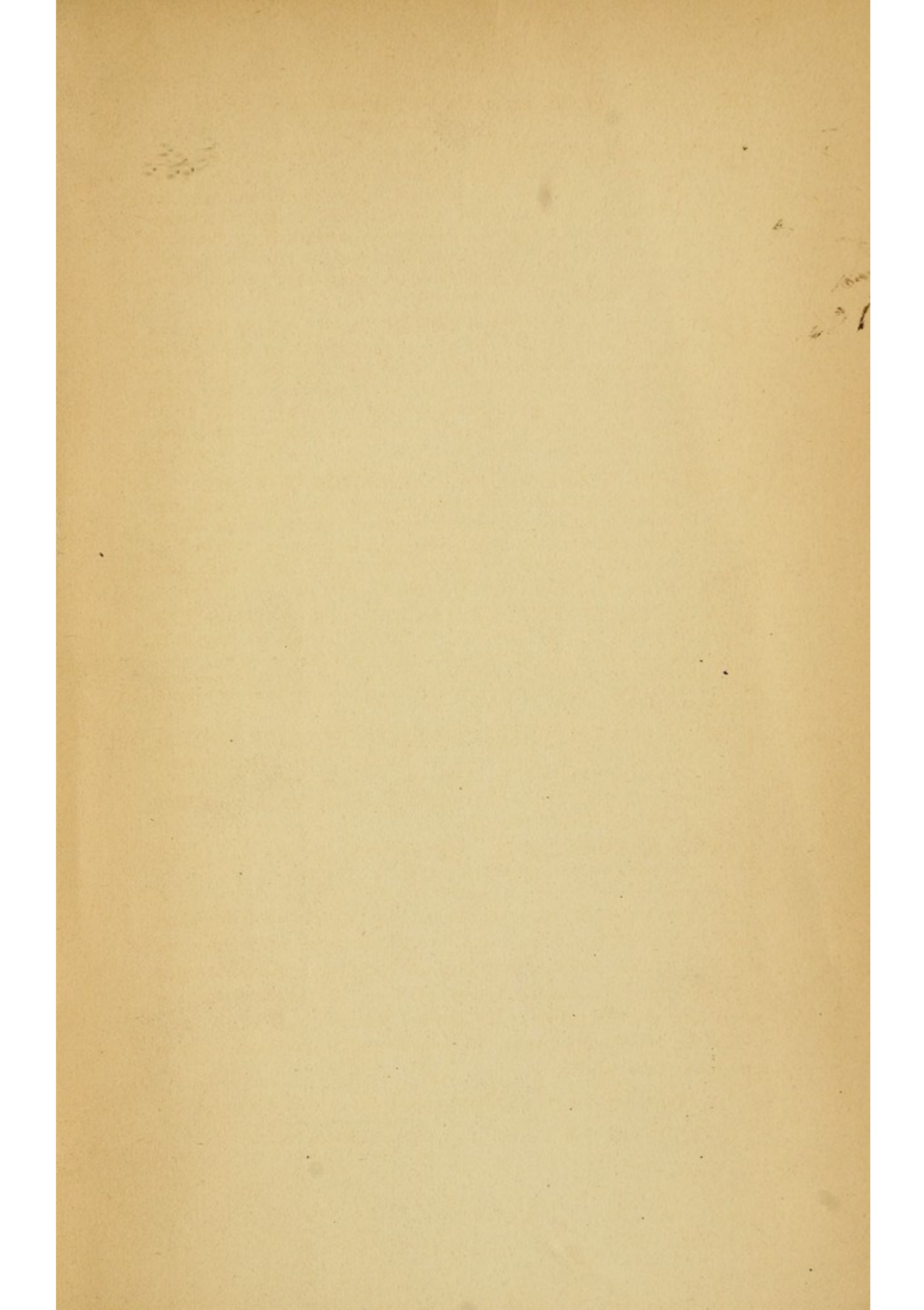
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