Unfortunately, not all hysterical females have ovarian troubles, and in such cases the method of compression is not applicable; you can then advantageously have recourse to electricity.

Vigouroux and Richer have shown that galvanic currents, one of the reophores being applied over the front, and the other over some other part of the body, diminish the duration of attacks of hysteria; moreover, if you suddenly reverse the direction of the currents, which is easily done with the commutators of Trouvé and Gaiffe, the attack ceases immediately. You must not exceed six to ten milliampères, for if you do, you will determine severe head-troubles.

In fine, inhalations have been proposed of odorous substances; the number of these is considerable, and the ingredients very strange, from deer's horns and goat's feet, to the odors of candle snuff, of the hairs of men and of animals, and the feathers of partridges and woodcocks; the ordinary perfumes, benzoin, musk, ambergris, etc., have all been advised. To-day we discard all these things, and recognize but a very few medicinal substances, whose inhalation has a beneficial effect on hysteria; these are ether, chloroform, and especially nitrite of amyl. Ether and chloroform may render you some service. I have not, however, been very successful with these anæsthetics. The attacks are prolonged, and they are almost sure to reappear when the anæsthetic sleep has passed off. Nitrite of amyl, with which Bourneville has made so many experiments in hysteria, certainly diminishes the intensity and the frequency of the convulsive paroxysms. You must not, however, resort to it, except during the attacks, for at other times it may determine convulsive seizures. When giving the nitrite of amyl, you pour five or six drops on a handkerchief, and cause the patient to inhale, them.

I shall finish this lecture by giving you, with as much brevity as possible, some indications respecting the treatment of certain manifestations of hysteria. The contractures are the most rebellious of symptoms in hysteria, and nothing is more painful than to see young women afflicted with various contractures,[1] which make life a torture. These contractures appear suddenly after an attack,

[1] Hysterical contractures, known for a long time, have been thoroughly studied the last few years by Charcot, Bourneville, and Voulet.

They may be transient and come on during the attacks of hysteria; artificial, and provoked by mechanical excitations, or permanent, and appear in the interval of the attacks, or after the attacks.

We shall here concern ourselves with only the permanent contractures. They may affect all the muscles, take on the hemiplegic or paraplegic form, strike singly a muscle or a whole group of muscles. They occur ordinarily suddenly and without apparent cause; sometimes, however, in a hysterical patient affected with flaccidity of the paralyzed limbs or even in a subject who has never yet presented symptoms of hysteria, a slight traumatism, or even muscular exertion suffices to give rise to contracture.

Contractures are always accompanied with a disturbance of sensibility, whether anæsthesia or hyperæsthesia of the skin. The muscles affected are in an absolute rigidity which the most energetic efforts do not succeed in overcoming, and which does not yield even momentarily except to chloroformization carried very far. The duration of the contractures is indefinite. They may last months, years, and cease spontaneously without apparent cause, or under the influence of some mental emotion, leaving the parts in a state of perfect integrity. The contracture may also persist indefinitely, and in this case the autopsy sometimes discloses a sclerosed state of the lateral columns of the spinal cord. Bourneville and Voulet divide contractures into partial contractures and contractures of the members.

The first embrace more particularly: (1) a half of the face; the muscles of the eye are not spared, whence result troubles of the accomodation; (2) the muscles of the upper maxilla (trismus); (3) the tongue, and sometimes the velum pendulum and œsophagus; (4) the muscles of one side of the neck (hysterical torticolis, which is one of the most frequent manifestations in infantile hysteria); (5) the muscles of the organic life, the choledic duct, whence icterus; the sphincter vesicæ whence retention of urine, etc.

The contracture of the the members takes on several forms; monoplegia, hemiparaplegia, paraplegia and hemiplegia. The contracture of an upper limb is quite rare; in these cases the limb is in a state of flexion, the arm adducted, the forearm supinated and half bent on the arm, the hand flexed on the wrist, the thumb bent into the palm of the hand and covered by the fingers strongly flexed. In the contracture of the lower extremity it is extension which predominates. When there is paraplegia, the member is in forced adduction; the knees are brought together, and the feet present a characteristic attitude (hysterical club foot); the heel is elevated, the tendo achillis is prominent and on the stretch, the dorsal aspect of the foot turned outwards, the plantar aspect is hollowed out and looks inward and backwards, the external malleolus becomes very prominent. The extremity of the foot is strongly depressed and the toes are flexed (Richer). It is quite rare to observe the crossed form in which the upper member of one side and the inferior member of the opposite side are affected.

What is sufficiently frequent is the periarticular form in the foot, and especially the hip.

When the muscles of the foot are affected, you observe, ordinarily, the variety of club foot known as *varus equinus*, sometimes the variety of *direct varus*.

In the hip contracture of the muscles of the pelvi-trochanteric region gives rise to hysterical coxalgia, spasmodic and nervous.

In these cases, as in all those where there is any doubt if it be hysteria or not, it is well to have recourse to chloroformization, to clear up the diagnosis; the hysterical contractures disappearing under the influence of the anæsthetic.

and may disappear as suddenly after another attack. This is an occurrence which is witnessed in all the manifestions of hysteria, and you have seen a fine illustration of it recently in our wards. I refer to that young hysterical girl who entered the hospital for gastric troubles, and was suddenly taken with contractures, which disappeared after a convulsive attack, which we induced by chloroform, given to anæsthesia. This is then a means of cure which you can employ in hysteric manifestations of every kind.

Electricity, metallotherapy, and cold douches have sometimes caused these contractures to disappear; in other cases they have resisted every kind of treatment, and have persisted for months and even for years. But whatever may be their intensity, they disappear momentarily under the influence of anæsthesia, when carried to completeness, or of energetic compression of the contractured member.

By the side of these contractures we must place paralysis, which appears and disappears with extreme rapidity. This paralysis, which often affects the inferior members, presents this curious peculiarity that it is always accompanied by trophic disturbances, and you will sometimes see hysterical paraplegics recover in an instant the integrity of their motor functions. It is here that electricity and hydrotherapy may give unlooked for curative results.

As for the troubles of sensibility,[1] I will not repeat what I said while treating of the neuralgias, and I will only say a word or two about anæsthesia. This is, as you know, a disorder almost constant in hysterical women, but one which

[1] Disorders of sensibility are quite frequent in hysteria, but those which are observed are generally cutaneous disturbances; hyperæsthesia and anæsthesia. Hyperæsthesia or dermatalgia, which is most often met in acute hysteria, according to Briquet, may present several degrees; touch acquires such a sensibility that the lightest contacts, even a breeze of fresh air, provoke a disagreeable impression, and in some cases even pain. The dermatalgia may commence by a limited point and from thence spread over the whole body; it may also be localized and affect half the body, the anterior or the posterior aspect, one or several limbs. It is accompanied also, in some cases at the beginning, with agitation, cerebral excitation, numbness and formications in the limbs, sometimes also with pains in the subjacent parts. Limited to the mammary region, it may provoke a severe pain in the gland and simulate a grave disease. Localized in the hand or foot it prevents prehension or walking; if it reaches the thorax it hinders respiration; if it is in the vulva and the entrance of the vagina, sexual relations become impossible. Hyperæsthesia sometimes co-exists with anæsthesia in certain points; hyperæsthesia of one side of the body, anæsthesia of the other. The superficial muscles are frequently affected; in 430 cases of hysteria, Briquet found only 20 that were exempt from muscular hyperæsthesia. Pressure, the lightest touch provoke pain, and this pain resides in the muscle itself, and is seated especially at the points of attachment of the muscles. Myoxalgia is peculiar to hysterical patients; it appears after an attack of convulsions, or slowly and gradually in anæmic patients and those who are a prey to disappointments. It is not accompanied by any inflammation, nor by any muscular lesion. Its duration is variable; it ceases with the causes which have produced it, or under the influence of an appropriate treatment. Cephalalgia, considered by some physicians an a neuralgia, a migrane, is, according to Briquet, a muscular hyperæsthesia; it is characterized by painful points on the forehead, on the temples, on the occipital region, on the top of the head.

The *clou hystrique* is ordinarily seated on the vertix or the anterior angle of the parietal bones; it occupies a variable extent, being as large as a two franc piece, or even a little larger; the pain is sometimes sufficiently violent to cause the patient to cry out, and is compared to the sensation of a hot iron or a nail bored into the head. Epigastralgia is extremely frequent (317 cases out of 358 have been observed by Briquet); it may have its seat in the recti muscles of the abdomen and accompany gastralgia. It generally precedes the attack of hysteria, augments during the paroxysm and persists some time after; it is intense and is aggravated by pressure, walking, coughing, and moral emotions; it hinders muscular movements and respiration. Rachialgia or hyperæsthesia of the muscles of the spinal column, is equally frequent (out of 430 cases it has been observed 306 times by Briquet). Like epigastralgia, it is generally seated on the left, and oftener in the upper half than in the lower half of the vertebral region. The pain may be brief and insignificant, or it may be permanent and so severe as to simulate Pott's disease of the spine, or some other spinal affection. Pressure awakens this pain, or exasperates it to such a degree as to provoke suffocation, dyspnœa, palpitations, a sense of strangulation in the throat, and constriction of the glottis. Plueralgia is very common in hysterical patients (out of 300 cases Briquet observed 233); it is very rare in men. It extends half the length of an intercostal space, starting from the vertebral groove, or it seems to be a continuation of the rachialgia and terminates in front being confounded with epigastralgia. It occupies ordinarily a space of four or five fingers' breadth on a level with the 5th, 6th, 7th, and 8th ribs. It is more common on the left side. The pain is either very light or very intense, and is exasperated by pressure, by cough and by movements. Under the name of cœlialgia Briquet describes hyperæsthesia of the muscles which compose the circumferance of the abdominal cavity, in front and behind; it exists in half of the cases; and it is frequently seated in different parts of the anterior wall. Hyperæsthesia of the muscles of the anterior part of the thorax constitutes thoracalgia. It is very rare. Hysterical patients suffer from arthralgia and this pain is developed in persons long subject to neuroses; such as dental, facial, intercostal, lumbo-abdominal, coccygeal neuralgias. Rarely there is sciatica. According to Briquet, true neuralgias are infrequent in hysterical persons, and appear rather as a complication than as direct effects of hysteria itself.

The hyperæsthesia may also attain the organs of special sense, which thus acquire extra acuteness.

When the hyperæsthesia affects the larynx and the upper part of the trachea it gives rise to the hysteric cough, to pseudo-croupal suffocation, and to asthma. The hysteric cough, more common in girls than in women who have exceeded thirty years of age, is never a primitive symptom. It may be continuous and only cease during sleep, or come on in paroxysms and last only a few hours. The hysteric cough may persist for months or even for years, and go away, suddenly or gradually. The pseudo-croupal suffocation is quite rare, yet has been so intense that tracheotomy has been practiced for its relief, as in two instances by Michon and Velpeau. The asthma (uterine asthma of Von Helmont) is never permanent, often disappears suddenly, and frequently alternates with some other hysterical phenomenon.

The hyperæsthesia of the digestive passages gives rise to gastralgia, and to enteralgia. The gastralgia may be one of the first symptoms of the hysteria, and it is seldom that it appears for the first time before the age of twenty-five. Patients begin by losing their appetite, then they have curious longings; eat clay, earth, charcoal, or have singular antipathies, and cannot eat such and such kinds of food. In other patients vomiting constitutes the predominant symptom; they cannot keep down any kind of nourishment, and vomit it before it has undergone the least digestion.

The gastralgia may completely destroy the appetite, may excite it or pervert it. When the patients eat, it is not rare that the ingestion of food causes a severe pain which is not quieted till they vomit. This leads them to refuse all nourishment, and it is quite likely in some of these cases that the suffering and inanition may be sufficient to cause death. At the autopsy no lesion of the stomach is found. Like all the hysterical symptoms, the gastralgia is under the influence of mental emotion. It may cease abruptly, and be replaced by some other phenomenon. Enteralgia is quite rare; Briquet has noted it but 20 times in 400 patients. It is characterized by quite sharp colicky pains, appearing and disappearing suddenly, and accompanied by flatulent distension of the belly. At the same time constipation is noted, and this sometimes so great that patients will pass weeks without going to stool. Other hyperæsthesias have also been met with; nephralgia, very uncommon; cystalgia and hysteralgia of the body or neck of the womb. Anæsthesia is common in hysterical persons; it may affect the skin, the sense organs and the muscles. It is general, unilateral, or it occupies only a limited portion of the integument; it is complete, that is to say that it is accompanied with abolition of the sense of touch, temperature and pain; or it is incomplete. It may appear suddenly, before or after the attacks of hysteria; sometimes also it comes on after a pronounced hyperæsthesia. Generally, anæsthesia shows itself insidiously, the patient not even being aware of it till the physician discovers it.

When the anæsthesia is complete, you may even transfix the limbs with a sharp instrument and the patient experiences no pain, his features are impassive, and the puncture gives little or no blood.

These phenomena explain the self-mutilations practiced by certain hysterical persons; they account also for the attitudes of the convulsionists of Saint Medard.

Complete anæsthesia is ordinarily accompanied with a lowered temperature, a retarded capillary circulation of the anæsthetic part, with formications and numbness in the neighboring parts, and a muscular weakness appreciable by the dynamometer.

When the anæsthesia is very extensive it may be complicated with cephalalgia. Whatever part it may affect, it never occupies but the localities innervated by nerves of the cerebro-

gives them so little trouble, that a person whom you observe for the first time will hardly call your attention to this loss of sensibility. I have seen patients presenting the strangest disorders of sensibility. I was first to observe what I

have described as *autographic women*,[1] and always it was the attentive examination of the patient, and never her declarations, which enabled me to detect these disorders.

At the same time the troubles of sensibility are important from the point of view of treatment, because when they disappear it may be affirmed that the patient will have no more attacks of hysteria. There exists, as I stated before, an intimate relation between the troubles of cutaneous sensibility and the convulsive phenomena. Metallotherapy, static electricity, the application of magnets, in short, all æsthesiogenous substances, may restore this sensibility, but generally this restoration is momentary.

Troubles of the special senses have been noted, and especially of sight. Charcot has pointed out the alterations of vision in hysterical patients, and I have myself observed, with Dr. Abadie, a very curious case of sudden amau-

spinal axis; it never affects those regions which receive their nerves from the great sympathetic principally, such as the lungs, the digestive tube, the heart. The most frequent form of hysterical anæsthesia is the hemi-anæsthesia, which affects the head, the limbs, the trunk of one side.

It is always accompanied with muscular enfeeblement of the same side, and often with a lowering of the temperature. It affects all the modes of sensibility; sensibility to touch, to pain, to temperature; the organs of sense, the sight, the smell, the taste, the hearing are alike involved. On the part of the eye, you may observe amblyopia, achromatopsia, amaurosis. The two eyes may be affected. Sometimes only one is involved, and in this case, the well eye supplies the place of the other, and the patients make little account of their affection. The amblyopia is habitually accompanied by general achromatopsia; violet is the first color to disappear, then green, red and finally blue.

Amaurosis may appear suddenly after an attack of hysteria (Briquet), or without any precursory sign independently of the attacks (Landouzy). Hearing is more rarely affected. As for the sense of smell; loss, complete or partial, of olfaction has been observed.

The loss of sensibility is oftener partial. On the part of the mouth, the buccal mucous membrane is sensitive on one side, insensitive on the other; one-half of the two borders of the internal aspect of the cheeks, of the palatine arch of the velum pendulum, of the gums.

Sapid substances are tasted only on one side, and in consequence of the anæsthesia, mastication is performed badly.

Sometimes a complete insensibility of the velum pendulum palati has been observed, titillation provoking no reflex action. The duration of the anæsthesia is variable; it may be temporary or continue months and even years; it ceases with the other hysterical accidents, or under the influence of treatment, such as the application of æsthesiogenous agents.

[1] Dujardin-Beaumetz reported to the Societé des Hôpitaux, at their meeting on the 11th of July, 1879, the first case of an autographic woman. In this patient it sufficed to trace on the skin characters or lines, to see developed at the end of a few minutes a salient gyrus, corresponding very exactly to the tracings, which remain for some time, and which, at first limited and strongly defined, spread more and more, to be effaced at the end of four or five hours. The characters so traced were sufficiently prominent so that a wet-proof could be taken from them, as was done for the museum of the Hôspital St. Louis.

Since the communication of Dujardin-Beaumetz the number of autographic women has considerably increased, and this same modification of the vaso-motors has been found, not only in hysterical persons, but also in men and women free from all nervous diseases. This symptom is an urticaria, limited to the point of the skin on which the markings are made. (Dujardin-Beaumetz, Note sur les troubles vaso-moteurs de lap eau observés sur une hysterique, femme autographiqué, Bull. et Mém. de la Soc. Med des Hôpitaux, t. xvi. 2e Serie, 1879, p. 197.)

rosis in a hysterical female, and which was speedily cured by the metallic applications.[1]

Gastric hysteria is one of the most formidable phases of this neurosis, for it interrupts nutrition, and eventually brings about such disorders as even to cause death. By the term gastric hysteria is understood all the gastric and intestinal disturbances which are observed in hysterical patients, from anorexia to incoercible vomiting. These vomitings may occur under two circumstances; either they succeed to that strange anuria, described by Charcot[2], or else they come on without any antecedents sufficient to account for them. In the first class of cases you ought to respect these vomitings, as they are uræmic; in the second you ought to endeavor to arrest them. To the therapeutic rules which I gave you when speaking of the treatment of vomiting, I now add artificial alimentation (gavage) and electricity. Forced feeding has given me excellent results in certain cases, when used at the onset of the attacks. Ballet has observed similar facts in the service of Charcot, and you will find in the excellent thesis of my pupil Deniau a certain number of observations of a like kind, cases occurring in my hospital service. At the same time, if you expect success from "gavage," you must begin the treatment at a period not far removed from the inception of the gastric troubles, for, as Débove has judiciously remarked, these vomitings, when they have lasted a long time, produce such an enfeeblement of the organism that all medical intervention is well nigh useless.

Apostoli has proposed to galvanize the pneumogastric during digestion, in order to prevent these vomitings. He requires the patient to take food; then immediately afterward he places the positive pole over the pneumogastric nerve on the right side, in the region of the neck, while the negative pole is held in the hand; then he passes a current of variable intensity, according as the nausea is more or less frequent. I have, by this means, employed in my

[1] Vide Charcot, Troubles de la vision chez les hysteriqués, Progrés Médicale, 1878, p. 37. Bonnefoy, Des troubles de la vision dans l'hysterie (Thése de Paris, 1874). Baron, Troubles de la vision ches les hysteriqués et les hystero-epileptiques (Thése de Paris, 1877). Galezowski, Progrés Méd., 1878, p. 39. Dujardin-Beaumetz et Abadie, Hysterical Amaurosis, Amelioration by Metallotherapy and by Magnets; Complete Cure under the Influence of Static Electricity (Progrés Médical, 1879). The following is a brief résumé of this most interesting observation: Mlle. X., aged sixteen, went to bed, January 21, with headache; had never before experienced any symptoms of hysteria; the next day, the 22d, she awoke totally blind. Examination of the eye by Abadie did not reveal any alteration of the fundus of the eye. There was loss of cutaneous sensibility on both sides of the body. Three pieces of gold were applied to the left temple, and in half an hour partial vision was restored on that side, but on the right side blindness persisted. Acuity of vision in the left eye, one-tenth. Magnets were applied, which ameliorated the right eye, and the sight of the left eye. February 5, acuity of vision was two-sevenths on the left, and one-fifth on the right. Each application of the magnet, or of metal, induced a state of lethargy; static electricity was then employed, and this completed the cure, and it has been permanent.

[2] Maladies du Syst. Nerveux, t. i. lect. ix. See also Ballet, Two Cases of Nervous Vomiting, Treated with Success by Forced Feeding (Prog. Med., June, 17, 1882). Deniau, De l'hysterie gastrique et de son traitement (Thése de Paris, 1883). Huchard, Traite des neuroses, Paris, 1883. Fabre (de Marseille), De l'hysterie viscerale, Paris, 1882.

service, seen digestion performed without rejection of the matters of the stomach. I shall not enlarge upon this therapeutic measure, which I fully treated of when lecturing on diseases of the stomach.

Such are the considerations which I wished to present respecting the treatment of hysteria. The therapeutic indications which I have furnished are far from being complete; at the same time I think them sufficient to enable you advantageously to combat the principal manifestations of this neurosis. But do not forget, gentlemen—and with these words I conclude—the complete cure of hysteria is very rare. You will hardly have triumphed over one of the many manifestations of this protean malady before others will make their appearance, and, notwithstanding all your knowledge, and all your energy, you will continually fail in the contest with these nervous troubles, ever renewed, and ever rooted in the depraved and insatiable imagination of the hysterical patient.

ON THE TREATMENT OF EPILEPSY.

SUMMARY.—Treatment of Epilepsy—Curability and Incurability—General Treatment—Pathogeny and Etiology—Experimental Epilepsy—Disease of the Spinal Cord, the Nerves, and the Brain—Causes—Therapeutics of Symptomatic Epilepsy—Antisyphilitic Treatment—Revulsion—Essential Epilepsy—Physiological Pathology—Treatment of Essential Epilepsy—Empirical Medication—Galium, Valerian, Hyosciamus, Belladonna, Indian Hemp, Nitrate of Silver, Oxide of Zinc, Ammonio-sulphate of Copper, Bromide of Potassium—History—Physiological Action of Bromide of Potassium—Employment of Bromide of Potassium in Epilepsy—Result of the Treatment—Rules of Administration—The Alkaline Bromides—Bromides of the Metals—Doses—Mode of Administration—Duration of Treatment—Curare, Cocculus Indicus and Picrotoxine—Treatment of the Attack—Hygienic Treatment.

Gentlemen: I devote this lecture to the treatment of that most formidable of the neuroses—epilepsy.[1] When we survey the numerous remedies which have been proposed for this disease—remedies often uncertain and inefficacious—we easily comprehend the discouragement and despair of many physicians

[1] Epilepsy (haut-mal, morbus sacer, herculeus, falling sickness, St. John's evil, etc.), is divided into symptomatic, idiopathic and sympathetic epilepsy. It is known under two principal forms, the grand-mal (convulsive form), and the petit-mal (form not convulsive). The grand-mal is often ushered in by prodromes lasting several instants or even hours or days. The patients are subject to divers troubles, lassitude, choking sensations, palpitations, pains in the stomach, cephalalgia, buzzings in the ears, dazzling sensations, perception of strong odors, of strange tastes, hallucinations of the sight and hearing. Some persons have an irresistible desire to walk, to run, to leap, others present a manifest change of character, become gay or sad; some have cerebral excitation, genital excitation, pollutions. Others complain of a sensation of cold, of tickling, or of pain which pursues generally an ascending course, starts in the foot or some other remote part, to mount up to the head with greater or less rapidity. Whether these phenomena, constituting what has been called the aura epileptica, exist or not, the patient is taken suddenly in a fit, he utters a cry, loses consciousness, and falls as if by lightning, generally in front, no matter where or on what object. The face is of cadaveric pallor; all sensibility is abolished; the patient is comatose. Soon arrives the convulsive period, the face colors rapidly, tonic convulsions immobilize the patient, who lies extended on his back, the head thrown behind or inclined to one side, the eyeballs hidden under the lids; the face is convulsed, the teeth are tightly set against each other, the limbs contractured, the hands bent back, the thumb adducted, flexed in the palm of the hand. Respiration is suspended. This period of tetanism gives place soon to short, rapid shocks, then to clonic convulsions, which become more and more rapid and general. The limbs, sometimes in supination, sometimes in pronation, flexion or extension, are agitated by continual shocks. The face is colored reddish purple, the forehead is wrinkled, the eyes roll in their sockets, the eyelids quiver, there is grinding of the teeth, the jaws open and shut with such force as sometimes to break the teeth or bite the tongue, wounding it severely; a frothy and bloody saliva escapes from the mouth. Respiration is convulsive, unequal, stertorous. The heart beats with force. Sometimes there is an abundant and involuntary emission of urine or of fecal matters; some subjects have even seminal polutions. After one or two minutes of this stage, the convulsions abate, the patient utters a deep sigh, respiration becomes full and strong, and is accompanied with stertor; the countenance becomes pale, is covered with perspiration, and the patient sleeps profoundly. This apo-

who have pronounced epilepsy incurable; moreover we see why the ancients attributed a divine origin to this affection, for to them the words *morbus sacer*, *morbus divinus*, testified sufficiently that the disease was generally above the resources of their art. But this feeling of discouragement ought no longer to exist. We have already found in the bromides a remedial agent which enables us to cure one half our epileptic patients, and we may be permitted to indulge the hope that some day we shall find a remedy still more powerful, which shall give us complete mastery of the disease. For this end we shall labor, and with all zeal.

It may almost be said that every medicine under heaven has one time

plectiform state lasts more or less long (from several minutes to several hours), and then the patient comes to himself, stupid, in a maze, quite unconscious of what has passed. Generally he is exhausted and complains of headache. There are even subjects who remain for some time hemiplegic and even aphasic. Others, on the contrary, recover almost immediately and have full possession of their physical and mental faculties. During the attack the pulse and the temperature present certain modifications. The pulse before the attack is rapid, cordy, and acquires force as the paroxysm advances. The temperature rises during the attack to 38° C., 38.5° C., and even to 40° C. during attacks of great intensity. On the part of the eye, during the aura there is observed, according to Brown-Sequard, Kusmaul, and Tenner, contraction of the arterioles and anæmia of the retina; according to others a hyperæmia of this membrane and encephalic congestion. Sometimes the attack may pass unperceived, when, for instance, it takes place in the night time. The patient relates with astonishment that he has wet his bed, that he found himself in the morning lying at the foot of the bed, and that he has headache; in fine that his tongue is bitten and hurts him. The onset of the attack of epilepsy has nothing about it that is fixed, either in respect to the time of its appearance or its duration. The fits may occur only at long intervals, or they may come on very often—several times in the same week, or same day; one may scarcely end before another begins, this sort of overlapping constituting what has been called the *status epilepticus*. The attacks have not always the same violence and certain convulsive phenomena may be wanting; the convulsions may be slight, and be limited to a general stiffness, a partial convulsion, the projection of a limb in front, behind or to the side, an imperious desire to rise, to walk, etc.; the patient does not cry out, does not fall, grows very pale, then comes to himself semi-conscious and stupid.

The *petit-mal*, the non-convulsive form of epilepsy, is characterized by absence of mind, vertigo, delirium. The attack comes on without prodromes. The patient is suddenly taken while reading, or engaged in conversation, a game of cards, etc. He stops suddenly as if stunned, becomes pale, has a fixed look, an aspect of hebetude, makes grimaces, then two or three seconds after he resumes his occupation completely unconscious of what has passed. Other patients fall suddenly from where they are standing or slip out of their chair, and rise up without perceiving their fall. Others in the midst of some occupation leave their place, go out and come back, without any remembrance of their conduct. There are some who during their sudden attack present contractions of certain muscles, pallor of the face, but continue mechanically and automatically the work which they had commenced. Other patients are taken with a more or less violent delirium of word and of action; they suddenly ejaculate incoherent words, make strange gestures, gesticulate violently or feel an impulse to walk, to run, etc. Under the impulsive and instantaneous delirium some commit obscene or criminal acts and cause themselves to be arrested for outrages against decency, for theft, homicide or arson. Then when after a period of greater or less length these unhappy beings come to themselves they have not the least recollection of their acts. These attacks last a few minutes, several hours or even several days; they may have temporary remissions or exacerbations.

or another been prescribed for epilepsy. Do not, then, expect from me an enumeration of this long list of medicaments; I shall merely touch upon a few of them to lay particular stress upon such as experience has proved efficacious. To give some system to my exposition, I shall divide the treatment of epilepsy into two parts: first, general treatment; second, treatment of the attack. In order to grasp the principles of the general treatment it is necessary to enter somewhat into details respecting the pathogeny of this affection.[1] Sometimes epilepsy is manifestly dependent on a lesion of the nervous system, it is then symptomatic; sometimes no lesion is apparent, and we call the epilepsy essential.

As for symptomatic epilepsy, experimental physiology and clinical observation have given us certain proofs of the influence of lesions of the nervous system on the development of this neurosis. Brown-Séquard by his curious experiments on guinea-pigs has shown us that epilepsy may be produced by section or ablation of the sciatic nerves, and what is stranger and still more inexplicable, that this experimental epilepsy affects not only the animal so mutilated, but also its offspring, so that epileptic guinea-pigs, in consequence of lesions of the sciatic nerves, ever afterward have epileptic progeny.

[1] The causes of epilepsy, which are multiple, may be divided into predisposing and exciting. It may be symptomatic, idiopathic, and sympathetic. The disease appears to affect women oftener than men, and preferably individuals that are delicate, lymphatic and nervous. It manifests itself towards the age of puberty or adolescence; it is rare that it appears after twenty-five or thirty, and in these cases, if observed in an individual previously healthy there is reason to believe it to be of syphilitic origin. Epilepsy may be hereditary, entailed as a legacy to the children by the father or the mother, or by the grand-parents, if the neurosis has skipped a generation, as sometimes happens. The parents may not be epileptic themselves, but only sufferers from neuroses, or chronic alcoholism, which is capable of giving origin to the disease. Epilepsy whose primary cause seems to consist in an abnormal excitation of the medulla oblongata, may be symptomatic of lesions of the nervous centres or of their membranes, of lesions of the cervical cord determined by compression, according to Charcot. The experiments of Brown-Séquard have shown, moreover, that you may provoke epileptic convulsions in an animal by making section of a part of the cord. According to Prof. Lasègue, epilepsy depends generally on a malformation of the cranium, or asymetry of the face. The disease is also often observed to follow traumatism of the cranium, depressed fracture of the bones, and compression of the brain. In these cases the application of the trepan sometimes effects a cure, if there has taken place no alteration of the encephalon.

In connection with true epilepsy it is proper to allude to the epileptiform convulsions which supervene in certain paludal fevers, in poisoning by alcohol, lead and mercury; in disease of the kidneys, Bright's disease, uræmia, in cases of cerebral tumors (cancer), in general paralysis. These cases differ from true epilepsy in this respect that very often there is neither the initial cry nor the characteristic pallor of the countenance nor the same comatose condition.

Syphilis is a frequent cause of epilepsy; the crises are at first only occasional, then they become frequent; they are often complicated with partial paralysis which may affect the monophlegic or hemiplegic form. Strong mental emotions, such as fright, anger, joy, disappointment, nervous exhaustion brought on by mental or physical excesses, severe pain, neuralgia, extreme heat or cold, are, according to some authors, so many causes of epilepsy. Wounding of sensory nerves (pricking, contusion, lacerating by a splinter of bone), compression of these nerves by a tumor in the neighborhood, a neuroma; the presence of the