

ones communicated with it. Contents, muco-purulent. Elsewhere the cut surface consisted chiefly of the orifices of enormously dilated thick-walled bronchi, with intervening slate-coloured fibroid patches and caseating areas. Around the base was a small portion of air containing lung tissue, the upper margin of which was studded with small circular patches of tubercular peri-bronchitis, gradually becoming closer together till the completely consolidated portion of lung was arrived at.

Right lung.—Similar to left in appearance and with regard to the pleurisy. But a much larger portion was free from tubercle, not more than half the lowest lobe being affected.

The *kidneys* were in a state of fatty degeneration, and in the left was a small infarct. The intestines presented numerous small tubercular ulcers. Vermiform appendix very long and large, with a sort of cyst the size of a pea at its apex, and studded within with tubercular ulcers. The large intestine also contained numerous and large ulcers. On the peritoneal aspect the tubercles could be distinctly traced. The mesenteric glands were enlarged to the size of peas, and were partly caseated.

I have placed under the microscope two sections of the lung. One under a low power shows the peri-bronchitis and bronchitis, which, though tubercular in origin, here shows no well-formed tubercles, but only diffuse small cell infiltration with numerous giant cells.

The epithelium of the bronchi has mostly degenerated, and there is diffuse small cell infiltration of the submucous tissue, distinct hyperæmia evidenced by the dilated vessels (the corpuscular contents are stained bright red with eosin), the fibroid portion is hypertrophied, and the mucous glands are in a state of diffuse small cell infiltration. The neighbouring alveoli are completely choked up with catarrhal material and for the most part metamorphosed into a dense pigmented fibroid tissue.

The other section cut from the same block, but magnified 1,000 diameters, shows the bacilli diffused in greater or less abundance through the mucous and submucous coat of the bronchi, and particularly in the most superficial caseous layer which has replaced the degenerated epithelium. They do not seem to be within the cells or in the depths of the fibrotic lung tissue.

ART. XXII.—*Syphilitic Arteritis.* By DR. PAUL LE ROUX.

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ARTERITIS is one of the tertiary manifestations of a syphilitic diathesis, producing the same lesions in the brain as in other organs—such as the spleen, liver, kidneys, lungs, or testicles. No matter in what part of the human frame it may be observed, it is

characterised by a cellular hyperplasia, liable to terminate later on in either sclerosis or gumma. Cerebral arteritis at first sight appears to be rare, but if one takes into consideration the cases of syphilis which are met with in hospital practice, it shows itself quite frequently, but the fact that the diagnosis is difficult accounts for the small number of cases on record; often it is only by a *post-mortem* examination that its existence is revealed. Syphilitic arteritis is curable in the first stage, when the lesion is forming, and the already diseased arteries are not completely invaded by the newly-formed tissue. For this reason it is most important to recognise the affection in the early stage, and upon this we have tried to throw light in this article.

In spite of the variety of the manifestations of cerebral syphilis, which is a protean affection, I will divide the symptoms into two classes—1st, symptoms which appear from the commencement, when the artery attacked is simply narrowed in calibre and the blood has some difficulty in flowing through the vessel; 2nd, the other symptoms appearing a little later on, when the artery is completely obliterated, and the blood is thus cut off from the vessel, and cannot carry life to that part of the brain for which it was intended. One of the first symptoms which attract the patient's attention is a persistent cephalalgia—becoming more intense in the evening—occupying the frontal region, rarely the occipital, and never the temporal. This cephalalgia renders all movements painful—walking is difficult, and soon becomes impossible. The vision diminishes, the intelligence is dulled, and the patient becomes depressed, gloomy, and apathetic; during sleep he is haunted by nightmare. Sometimes the patient is exhausted, and this exhaustion can go as far as syncope, loss of consciousness more or less prolonged; nausea, rarely with vomiting; slow pulse, sometimes to a very marked degree. Then the patient may be taken with vertigo while in the street, and he reels like a drunkard. He may forget his name or certain words, and is aware of this fact (verbal amnesia); the diminishing intelligence obliges him to give up work. Certain persons experience these symptoms only when they are exposed to certain influences, such as cold, &c. For example, take a doctor in possession of all his intellectual faculties, who at certain intervals—especially when he has been exposed to cold—experiences giddiness and paralytic phenomena after presenting some fifteen years past the symptoms of cerebral compression. This patient, cured by iodide of potassium, owes, without

doubt, these transient cerebral symptoms to a difficulty in the cerebral circulation, caused by an endarteritis more or less pronounced, according to the influencing exterior conditions. After these symptoms, pointing to a difficulty of circulation in the brain, appear paralytic phenomena. For example, a patient, after some discomfort—such as a slight loss of appetite, lessening of hearing or of sight—goes to bed as usual; the next day he continues to sleep, his eyes are closed, and the respiration is stertorous. The limbs are relaxed without paralysis; the sensibility to a prick or a pinch is preserved. Often a certain time goes by—relatively quite long—before the symptoms become serious and of a marked intensity; the paralysis is often limited to certain parts of the limbs, confined to one of them, or to one side of the face, for example. Rarely does the hemiplegia appear suddenly, and if so it is more likely caused by a tumour of the brain pressing on the artery, and thus producing obliteration. More frequently it attacks the patient slowly; he feels the attack coming on, and follows its progression—which is sometimes steady, at other times irregular.

As syphilis attacks in preference the base of the brain, it is not difficult to foresee that the oculo-motor nerve, and in general all the nerves of the eye emerging from the inferior aspect of the brain, the facial, &c., are frequently attacked. The hemiplegia of the face, a symptom quite important to note, is more often crossed than direct. The uvula is deviated, which shows that the nerve is attacked before it emerges from the aqueduct of Fallopius. The troubles in the intelligence can go as far as insanity, and the case cited in Rabot's thesis (Paris, 1875) is a good proof of this.

General paralysis of syphilitic origin is difficult to distinguish, nevertheless a characteristic symptom of the affection—"le délire des grandeurs"—is often wanting in this case. Sometimes at the same time with the different symptoms already enumerated, and coinciding with the hemiplegia, the coma may be accompanied by convulsions, or epileptoid attacks. At other times these attacks come on at the same time as the resolution of the limbs and the coma. These symptoms are generally of grave prognosis, and often indicate a final evolution of the disease. The symptoms caused by an arteritis are liable to disappear, so a hemiplegia can improve, or even get completely well; but once the lesion formed, and the artery completely obliterated, all efforts to cure are nearly useless. It is a common lesion which cannot be mastered—the territory, no longer nourished by the artery, cannot live, and is destined to die.

It is the necrobiosis of the tissue with complications which are dependent on it—encephalitis, meningitis, &c. The prognosis, as is seen, is always rather bad, and this affection demands the greatest attention on the part of the medical man; on the diagnosis often depends the safety of the patient, for a well-directed treatment can alone arrest, better, or cure this grave affection if taken in hand in time.

Can the lesions of the arteries be mistaken for other diseases? Can syphilitic arteritis be confounded with atheroma, tuberculosis, &c.? An attentive examination will show us that an arterio-sclerosis is never localised in one artery—the entire vascular system is invaded. The arteries are hard, resisting, resembling cords; they are, as Professor Peter says, “the rust of life,” and are more often present in old age. Thus, as Professor Fournier says:—“Every hemiplegia appearing in a subject under forty years of age, who is not affected by alcoholism or a lesion of the heart, is at least eight times out of ten, perhaps even nine out of ten, of syphilitic origin.” It is the same for epilepsy and ocular paralysis; it is evident that among this number we do not include patients with hereditary syphilis.

Tuberculosis resembles syphilis in certain ways, but it only rarely attacks small arteries, and especially the cerebral arteries; it attacks other parts, invading rather the sheath of the vessel and the connective tissue in which it is found embedded, agglomerated, and forming a mass circumscribing the calibre of the artery. Age also pleads in favour of syphilitic lesions; cerebral tuberculosis (meningitis, or other accidents) is nearly always the appanage of infancy. On the other hand, the treatment has a supreme action, and if we should recall to mind the old saying, “*Naturam morborum curationes ostendunt*,” we cannot help inclining towards the idea that these lesions on which iodide of potassium has so much influence are of syphilitic origin. Unfortunately, tuberculosis and atheroma still await their specific remedies, and therapeutics, in spite of all efforts, has hardly any power over these two terrible diseases. A symptom of arteritis, to which hardly any attention has been called, and which was in the first instance studied by Professor Vulpian, may have a certain diagnostic importance, and present a certain interest from the physiological point of view—this is cyanosis. The three cases on which this article is based are curious in many respects.

The first is that of a cook, aged twenty-eight, who came into the

Hôtel Dieu with a slight typhoid fever, with some spots of purpura on the inferior internal part of the right leg, over the tibio-tarsal articulation, with sharp pains in this region. Convalescence at the end of two weeks; internal pains were felt at the union of the superior one-third with the inferior two-thirds of the anterior internal face of the thigh, radiating along the course of the femoral. No fever; normal heart; no cord of lymphatics along the course of the vessel; palpation extremely painful; both dorsales pedis arteries are felt with difficulty; the left posterior tibial artery beats much more strongly than the right; at the same place, behind the malleolus, it is nearly imperceptible. When the patient got up, the skin of the leg and foot was cyanosed, and sweat appeared on the foot. Sometime after the progress of the disease became more encouraging, the pains disappeared little by little, cyanosis persisted for some time, the pulsations came back little by little, and seven weeks later the patient was discharged.

M. Barié ^{(1)*} has also published some cases, and more recently Dr. Brunon ⁽²⁾—at that time Professor Vulpian's *interne*—adds two cases, in which the symptom of cyanosis was very pronounced. Professor Vulpian admits that this modification in the circulation of the foot and leg may be explained by a diminution of the afflux of blood in the capillaries. Cutaneous cyanosis and dilatation of the veins are not present while the patient is in bed; the flow of blood in the arteries is not interrupted, but simply lessened. In the horizontal position the venous blood is pushed towards the thigh by a sufficient pressure, but in the upright position cyanosis becomes marked, the veins swell because the pressure transmitted by the arteries to the veins, *via* the capillaries, is no longer strong enough to overcome the obstacle opposed by the weight, and it consequently results in a relative stagnation of blood in the veins and capillaries. The feebleness of the pulse of the posterior tibial artery of the diseased limb confirmed the idea that the flow of blood was less free than in the healthy one, and it is easily understood how much the symptom of cyanosis merits one's attention, and also how important it may be in throwing light upon a diagnosis, when one has the good fortune to find it present. This sign, indicated by Vulpian, Barié, and Brunon, should be looked for in that cerebral arteritis which now occupies us; in fact, in the case where cyanosis of one side of the face or neck is remarked, this symptom should be a great assistance to the physician in the

* The numerals refer to the Bibliography at the end of this paper.

diagnosis. But this is, after all, a pathologico-physiological point of view, which is interesting, but useless to investigate, excepting the cyanosis—at least, in analogous phenomena derived from circulatory derangements, as indicated by Vulpian and Brunon. I found nothing in my patients, but nevertheless it appeared to me interesting to make an analysis of those facts, and to draw attention to them.

The origin of every syphilitic new-formation, as Professor Fournier has so clearly shown in his clinical lectures, is a cellular hyperplasia—that is to say, a local proliferation of cells more or less abundant—in a certain point of the economy. Diffused in the midst of an amorphous investing membrane, these elements infiltrate the parenchyma of the affected organ in various degrees, and by multiplication, finish by forming a nodose tumour, which was called a “node” in by-gone years, and to-day is called circumscribed or diffuse infiltration.

En résumé, in the first period of tertiary phenomena, hyperplastic deposits are found, interstitial formations in the interior of the affected organ. Later on this hyperplasia undergoes, as I have already said, one or the other mode of evolution which I will now briefly describe.

1. The cell elements may be full of life and remain endowed with vitality. In this case they multiply, are much proliferated, and form an organic mass containing in its meshes the normal tissues, in the middle of which this new formation had developed. This mass becomes condensed—at first cellular, it changes to cellulo-fibroid, fibroid, and at length fibrous. Little by little it retracts like all nodular productions, the normal elements of the organ are then found imprisoned and compressed, smothered up, as it were, by this proliferated and contractile mass, so that they atrophy, degenerate, and progressively disappear partly or totally. This new tissue takes the place of the fundamental tissue, and sclerosis is formed.

2. The cell elements, endowed without doubt with a less degree of vitality, are hastily disorganised when formed with difficulty; they are, so to speak, born dead. Almost as soon as the cells are united they tend to destroy one another, passing through a series of transformations of segmentation known as granulo-fatty degeneration. In short, these elements die *in situ*, and soon they only form in the heart of the living tissue a kind of detritus, having the aspect of a yellowish, caseous mass, tuberculiform, known as “gumma.” Among the principal points attacked by cerebral syphilis the following

should be signalised :—The Sylvian arteries and the basilar trunk, sometimes also the small terminal intracranial arteries. The lesions are generally limited to a very small extent, sometimes in two symmetrical points. A dilatation of an artery may be found, but oftener there exists a contraction following the formation of a kind of cicatricial tissue. The calibre of the artery is lessened by proliferation of young cells in the vascular parts of the coats of the vessels. This infiltration ordinarily follows the processes of sclerosis; the cells infiltrating the coats of the vessels form rigid meshes which, little by little, retract as in all nodular tissue, consequently causing reduction in the calibre of the artery. The processes may predominate, either in the external coats or in the internal coats, but whether there is periarteritis or endoarteritis the result is the same, and this distinction to-day has not the importance that certain authors attached to it, for often the two lesions exist together, and the vessel is so compressed that the lesions of the external coats are not long in acting upon the circulation in the same manner as the internal diseased coats. The artery being narrowed and diminished in calibre, the blood flows through it with difficulty, and it even finishes in obliteration; a fibrous mass then forms, in the same way as in ligature of the vessel. So in these cases, one finds at the autopsy—as in the case which will be described further on—the artery hard, resistant, containing a clot of blood, adherent and evidently formed on the spot, with a blackish fusiform prolongation of new formation. The artery may be, 1st, thickened in a variable extent, sometimes only in a portion of its circumference, at other times in the entire circumference—the artery is rigid and hard; 2nd, sometimes it only contains spots, patches which project on the internal or external surfaces of the artery; 3rd, exceptionally nodosities are to be found resembling grains of rice; 4th and last degree, the artery may be constricted, or even completely obliterated.

Among the authors who have reported cases of syphilitic arteritis I may cite Dittrich, Hayach, Virchow, Meyer, who found the cerebral carotid arteries obliterated in patients having visceral syphilis (3). One of these cases approaches one of my own to be related further on. The patient had had vertigo, persistent headaches, some epileptoid attacks, feebleness of the left side of the body, movements on this side being very weak; right less distinct; speech difficult and confused; at last coma came on, followed by death. At the autopsy the dura mater was found thickened,

adhering by means of fibroid tissue to the cerebral substance; the right carotid artery and its branches were obliterated by fibrous cords adhering to the walls of the vessels. The liver was full of cicatrices, containing several small tumours. Another case cited in 'Lancereaux's work' (4) is most interesting, for it treats of a young man manifestly syphilitic, and the affected artery was examined microscopically. A young man, aged twenty-five, under treatment for five months for a syphilitic affection which could not be cured, succumbed rapidly after presenting symptoms of an encephalitis. The autopsy showed, besides some tumours of small size, the existence of a localised encephalitis, with a partial obliteration of both internal carotid arteries at their terminations. Both the affected arteries contained a new formation, rendering them thicker and notably narrowing their calibre.

It is evident in this case that it was not an atheromatous lesion but a circumscribed lesion formed of cells and spherical nuclei. Sternberg, Wells, and Weber found the same alterations in different arteries—cerebral, pulmonary, the aorta, &c.; these lesions, limited to one spot, are characteristic of the tertiary period of syphilis, whether the thickening of the coats be external or internal. A case in Prof. Trélat's service at the Salpêtrière (5) was that of a woman having lypemania, and who died soon after entering the hospital. The autopsy showed: The basilar trunk had a whitish colour, with thickened walls; on section it is found not to be an atheromatous artery, for the vessel is supple, elastic, the external coat being the only one thickened. The Sylvian artery presented nodosities the size of a bean, white, and irregular. On a great many of the small branches fusiform nodosities were found, measuring from 3 millimetres to 1 centimetre, being still larger in the arteries destined for the cerebral substance. The arteries were very narrow, and even obliterated, adhering by their external surface to the neighbouring cerebral substance, particles of which were found adhering to the artery when this organ was torn off. The microscopical examination revealed an acute arteritis, with thickening of the internal coat, and a very active proliferation of the connective tissue elements in the middle coat. The basilar trunk also presented a considerable thickening of its internal coat. This nerve-tissue was composed of fusiform or branching cells in the midst of an intermediate, finely-fibrous substance; the elastic coat was intact, the muscular coat was infiltrated by round embryonic cells and furrowed by capillaries gorged with blood; the external

coat was infiltrated with round cells grouped in linear masses along the perivascular lymph spaces, and sometimes forming considerable globular masses. The vasavasorum were dilated and filled with blood. Several were also surrounded by embryonic cells, recalling to mind the vessels which are seen in erysipelas. The calibre of the basilar trunk was diminished by sanguineous thrombi. The nodosities of the small arteries were anatomically made up of similar alterations; it was also remarked that the canal of the artery was obliterated by a proliferation of the internal coat. Lately Lancereaux, Marotte, and Jackson have published cases of obliteration of the left internal carotid artery. No one is unaware that Prof. Lutzgarten, of Vienna, believes he has discovered in the microscopical sections of chancre the specific bacillus of the disease. According to this gentleman, this bacillus is always found included in the migratory cells which are endowed with locomotion, met with oftener on the border than in the midst of the infiltration; it loses its colour by the action of acids, while alcohol has no action whatever on it. Doutrelepon, of Bonn, and Schultz found them in the syphilitic products; this bacillus does not abound, but it may be cultivated, and its inoculation, which has been attempted several times, gave no positive result, so that one is reduced to recognise them by their form, their manner of implantation in the tissues, and the special proceedings for colouring them. The experiments of Alvarez and Favel, made under the direction of Prof. Cornil, have very much shaken the view as to the problematic specificity of this bacillus; they found the same bacillus in the normal secretions of the external genital organs and in the smegma præputiale; on the other hand, they did not find it in the microscopical sections of the tissue of indurated chancres, but only in the secretions of mucus patches, ulcerated patches, ulcerated syphilides, and different secretions of the external genital organs; whether these secretions are obtained from a syphilitic or a healthy person this bacillus existed in the same manner. For the time being it appears to me difficult to admit the specificity of Lutzgarten's bacillus, and I shall wait for new experiments. The treatment is simple: iodide of potassium and mercury in quite large doses alone can root out the manifestations of the diathesis, sustaining at the same time the strength of the patient. I shall nevertheless enter into some details. When should this treatment be commenced? In the first place, this treatment should be commenced as soon as possible, for cerebral syphilis in the commencement gives in quite easily, not, how-

ever, always, to antisyphilitic treatment; the longer one waits the more rebellious it becomes, and if it arrives at this period of disorganisation of which I have already spoken, it is in vain that we act vigorously against it, for it is too late. So, *en résumé*, cerebral syphilis should be treated the moment that the diagnosis has been made, as soon as the persistent nocturnal headache or the different troubles of the intelligence are present. Secondly, the treatment should be prescribed in a most energetic way; if only an anodyne treatment is applied the patient but rarely recovers, and as Prof. Fournis says, "to do little or less than the necessary measures is to do about nothing at all;" it is necessary to employ, according to the same gentleman, "le traitement d'assaut," combining mercury and iodide of potassium, the two great antisyphilitic remedies. The iodide should be given the greater part of the time by the mouth; very exceptionally, in cases of complete intolerance, by the rectum; it should be given in doses of 3 grammes a day in the beginning, which dose will be progressively increased to 4, 5, 6, and even 8 grammes in the 24 hours. It is rarely necessary to give over 8 grammes, and if given in larger doses, intolerance, gastro-intestinal troubles, and supersaturation will rapidly be produced. In order to make the iodide acceptable to the patient, it may be mixed with wine, water, beer, or soup, and taken in several doses at the commencement and middle of the meal. Mercury may be administered by the mouth in the form of mercurous iodide or sublimate. The green iodide, in doses of 10 to 20 centigrammes, the bichloride from 2 to 5 centigrammes, calomel in fractional doses during four days as follows:—

1st day	-	-	-	25 centigrammes
2nd day	-	-	-	50 ,,
3rd day	-	-	-	75 ,,
4th day	-	-	-	1 gramme.

Each day the dose should be given in ten parts. This method of treatment has given good results in the hands of Dr. Hillairet, who is its author, but it demands an active watchfulness, and the medicine must be stopped after this stage for a week, and then recommenced. Frictions of mercury have given me good results, for they do not tire the stomach, and at the most produce only a little erythema, stomatitis, and slight salivation—accidents which are in no way dangerous, and which may be done away with by administering chlorate of potassium or alum in the form of gargle or potion. To prevent the organism becoming habituated—which in

a long treatment destroys the good effects of a medicament—it is very useful to alternate the mercurial frictions with iodide of potassium, giving each remedy alternately for three weeks at a time. The treatment should be continued until the symptoms have completely disappeared, and even after, for later on the diathesis can become active again; so the patient should be advised to follow a special course of hygiene and an appropriate treatment—that is to say, several periods of mercurial treatment as well as to take the iodide for some years. Purgatives and cutaneous revulsives have also their indications, and lastly, outside of the treatment of the specific affection the general condition of the patient necessitates a careful attention. The strength must be kept up by a tonic regimen—iron, quinine, bitters, cod-liver oil, the sulphurous thermal mineral waters of Uriage (Isère), Bagnères-de-Luchon, &c., in France.^a

CASE I.—Pauline G., aged twenty-four, dress-maker; entered the Hôtel Dieu of Rouen, May 23rd, 1888. At the commencement of the same year the patient had been treated during a month in the hospital. At that time she had very frequently vertigo and giddiness. The following facts were obtained from the patient:—Had been healthy up to the age of twenty, when she had a severe attack of enteritis, which profoundly altered her health; since then she had been subject to vertigo and giddiness. Sight is lessened, and at certain moments she can distinguish nothing; all appears foggy. At different times she has had pains in the articulations, but they did not oblige the patient to remain in bed or to give up work. No cough; nothing abnormal in the thorax. Quite frequent palpitations of the heart, with a sentiment of oppression and smothering, especially on the least effort. Appetite capricious; between meals the patient experiences faintness and twitching of the stomach; no vomiting. Menstruated at sixteen years; at the time of their appearance the menses always caused a certain malaise. They were difficult, and not at all abundant; very frequent leucorrhœa. In May, 1887, she suffered greatly on account of a delay in their appearance, and had an incomplete paralysis of the left side. This phenomenon persisted for some days (about eight), then diminished, so that a month later all was ended. No trace of syphilis; the patient denied having had any accident, so that the diagnosis remained very undecided. On her returning on April 10th she informed me that her menses had not returned, and that she was taken with the same symptoms as in the preceding year. Some days ago she lost consciousness, and on coming to she was paralysed on the left side; incomplete hemiplegia. Her strength has since slightly

^a Schinznach, in Switzerland, can also be recommended as excellent in syphilitic affections.—TRANSLATOR'S NOTE.

returned, but the patient still feels, especially on the right side, a sharp persistent pain.

April 11th.—Patient feels feeble on the right side; she still can move the right arm and leg a little. When she laughs, whistles, or speaks, the mouth is strongly deviated to the left; the cheeks are flabby, eyes are equally opened, but she cannot look straight forward; tongue is deviated, the sensibility slightly altered, especially on the paralysed side; the face is pale, and has a fatigued expression. On auscultation of the thorax nothing abnormal was found; hissing is heard at the base of the heart; bruit of anæmia, slight hyperæsthesia of the ovaries; sensation of lump in the throat. Treatment consisted in sulphur baths and tonics. The phenomena progressively subside; the patient began to get up and take a few steps, dragging the leg after her; the step is tottering, and the patient holds on to the beds in order to walk. The hand is still weak, and the arm heavy; mouth deviated to the left; sight is better, although often hazy. In spite of the advice given her to remain, the patient left the hospital improved, but dragging her leg. She could not return to her work.

Second Sojourn—May 23rd.—Patient was found in the street struggling as in an attack of epilepsy, and is brought to the Hôtel Dieu. When in the ward the patient had another attack; revulsives were applied to the legs and chest, and cold water was thrown on her, and the attack abated. A little later another attack came on; slight clonic movements, the head is turned from side to side on the pillow; pulsation of the eyelids; the arms are agitated by jerking movements; the hands are clenched with the thumb inside. In forced adduction the fingers were slightly flexed, the face pale; sensibility slightly marked; frequent respiration. Several attacks succeed one another. Coma continued, and at the evening visit the patient is still in the same condition. A purgative injection was given; mustard plasters applied to the thighs, legs, and thorax. The patient was agitated, and appeared to feel; she gave a few little inarticulate cries, opened her eyes and shut them immediately.

May 24th.—Coma still exists; the members are in complete resolution, and the right arm when lifted falls more relaxed than the left arm; the leg as well falls. Irritation of the skin by pricking or pinching hardly produces any movements; there are a few contractions of the face. The head is turned to the right and the eyes as well—they look towards the affected side. The gaze is fixed; no strabismus; the pupils appear dilated, but not irregular. The labial commissure is drawn to the left; the patient has not urinated or had a stool since she was brought to the hospital. No vomiting, so the diagnosis of meningitis is discarded. Respiration slow; heart-beats are about normal. The injection not having produced an effect, 50 centigrammes of calomel are given in one dose, but also without effect. A purgative injection is given, which

produced a slight stool; the urine was withdrawn by a sound, and contained neither albumen nor sugar.

May 25th.—In the evening had an epileptoid attack. If her head is raised up the patient gives some little cries; the neck is stiff, the left arm is slightly contracted. The eye follows the persons who pass by the bed.

May 26th.—Ecchymosis on the left leg, caused by her fall; on the internal part of the left foot, and on the dorsum of the right, are found two excoriations, measuring about 3 centimetres each. The patient urinates and defecates in bed; no consciousness. The questions addressed do not wake the patient from her somnolency; the eye no longer follows the finger. Pricking and pinching produce no movement of the arms, but in the right leg slight movement can be produced; entire inertia on the left side. During the day the patient complains a great deal, and gives little cries. In the afternoon she can no longer swallow; dysphagia exists.

May 27th.—Same condition; complete resolution; face pale; the saliva runs from the right commissure of the mouth; the head still turned to the right, towards the affected side. Eye fixed, with nystagmus; oscillation and trembling. Pupils equal, and not dilated; left foot turned in; noisy, stertorous respiration. Pain causes a grimace on the right side of the face; the left remains immovable.

May 28th.—Same condition; coma more profound; stertorous respiration, with interruptions (Cheyne-Stokes' respiration.) Pulse frequent, feeble, irregular; 40 respirations per minute. Temperature, 39.5° C.; incontinence of urine and faecal matter. Died at half-past three in the afternoon.

Autopsy eighteen hours after Death.—Lungs healthy; a few adhesions of the left lung. Heart flabby, slightly fatty; nothing of note in the large vessels or aorta. Liver slightly fatty; spleen normal. The right kidney presents, on examination, a furrow on the posterior surface, dividing the organ into two parts. This sulcus, in the form of a cicatrix, is about one centimetre in width, broader on the anterior surface, in such a manner that it is situated about midway between the extremities of the kidney. In the middle of this sulcus a whitish lump, surrounded by a reddish areola, is found. This surface also presents other little irregular projections, and a multitude of small white nuclei, the size of a pin's head, on the upper part of the cicatrix. The left kidney presents more advanced and more generalised lesions; it is atrophied, and in certain parts the cortical substance, has completely disappeared. These lesions, and in particular the small tumours as well as the cicatrix in the form of a furrow, seemed to be due to syphilis. The corpus callosum has a small yellowish nucleus the size of a pea on the left side. On the right side are found several softened spots in the centrum ovale minus, especially in its middle third;

a more considerable spot of softening is remarked in the left side of the corpora striata. There is a very extended softening, reaching to nearly the internal capsule; this nucleus enters deeply and nearly reaches the insula. On section a yellowish liquid flows out. The same lesions, only more advanced, are found in the occipital lobe. The left Sylvian artery is narrower than the right one, and at first sight offers a whitish aspect. On incising the artery at this point a yellowish-white, hard, adherent clot is discovered, on each side of which is a blackish stratified clot extending into the various branches of the Sylvian artery. It is to this organised clot, evidently formed on the spot, that the cause of softening is due. The uterus is voluminous, presenting a notable thickening towards the fundus, and containing a fœtus of three and a half months, dead for some time, for it was macerated, and the epidermis was detached in several places.

CASE II.—D., aged fifty; entered Hôtel Dieu Jan. 12, 1889; married; has had eight children, the last child born dead in 1870, the others were born living, but died young, at about the age of nine months. Her husband is well, but is subject to obstinate sore throats, and the patient herself is also subject to the same affection; persistent headache in the frontal region. Jan. 7, while at work at the theatre, where she is dresser, she had become dazed, and would have fallen had she not leaned against the wall. When this passed away she noticed that her left leg and arm were very weak; she dragged her leg after her, and in the beginning she could not sit down without falling to the left. The sight was troubled, and she could not distinguish objects before her. Returning to her home in a carriage, she there remained until Jan. 12. Seeing that she became no better, she entered the hospital. What draws attention at first sight is her way of speaking. Speech is slow, jerking, as in subjects having medullary sclerosis; the right eyelid is drooped; the eye projects (divergent strabismus very pronounced; patient sees an object placed at her side without turning her head; no diplopia; divergence of rays is destroyed). Left eye is intact; when the patient stretches out her hands a slight trembling is observed; the more she does so, the greater the nutation. The patient denies any excess in alcohol, and said that she had trembled for the last five or six years. Liver and spleen present no alteration; lungs and heart give no pathological sign; no atheroma of the arteries. A saline purgative was given on the morning of her entering—two grammes of iodide of potassium.

Jan. 15.—Patient complains of excessively violent pains in the frontal region, and in the neck and legs, especially in the right; nevertheless, no traces of the diathesis are to be found on the body. Examination of the urine shows absence of sugar and albumen. The right eye causes great distress to the patient; in order to distinguish objects she is obliged to

shut the right eye; without this precaution she has vertigo. The images formed in the eye are slightly inclined, and the foot of the bed in front of her appears to her inclined downwards, and to the left; looking with both eyes the image of the right eye is situated at the left of the one seen by the left eye; pupil is dilated; the ophthalmic ganglia (motor root) is paralysed, the pupil no longer contracting when exposed to strong light. The troubles of the right diplopia, &c., are all due to paralysis of the ocular motor nerve; thus the upper eyelid is lowered, and the patient cannot completely open her eye. Slight anæsthesia on the right and on all the left side of the face.

Jan 21.—Pain in the cervical region; no notable improvement; ophthalmoscopic examination reveals no appreciable lesion.

Jan. 28.—Pain in the cervical region has disappeared.

Feb. 4.—Patient leaves upon request, although imperfectly cured; the eye is more opened and the sight less troubled. The patient was seen by myself at her home; was in the same condition; the eye was only half opened, and the patient cannot direct herself alone; the nutation and trembling are still very accentuated. Since leaving the hospital the patient has not improved—rather the contrary; without doubt, because she took little pains to follow the treatment prescribed.

CASE III.—D., dressmaker, aged twenty-three, entered hospital Jan. 7, 1889. Nothing to note in her antecedents. Her mother died asthmatic, her father died shortly after her birth, and she cannot give any information as to her disease. Brought up on the nursing-bottle at home, she has always suffered. Two years ago she had a disease of the intestines, but since has been quite well. In June, 1888, she noticed pimples on the genital organs and legs, which disappeared, leaving yellowish, copper-coloured spots, to-day still perfectly visible. At the same time the patient said that she experienced a persistent sore throat, and on attentive examination of the mucous membrane of the lips, small white patches may be observed resembling mucous patches. Examination of the eyes reveals an inequality of the pupils. The pupils were irregular, and towards the month of July she was obliged to consult a doctor, who gave her a collyrium, the name of which she has forgotten, and a mixture of iodide of potassium. Some days after her entrance at the Hôtel Dieu, a few drops of atropin were instilled into the eyes, and by the ophthalmoscope white streaks are found extending from the iris to the anterior surface of the crystalline; consequently a syphilitic iritis. On the evening of Jan. 5th the patient noticed that her right arm became heavier, and that she could not move it; the right leg also was weak and could not support the weight of the body, and was dragged in walking; the mouth was turned to the left. On entering the right arm and leg are nearly completely paralysed, the sensibility is unaltered, the speech is difficult, and the mouth is drawn to

the left. When the patient laughs or whistles this is more marked; the commissure is drawn to the left; the right side is immovable, otherwise normal. On the neck small white spots are found scattered over a brown-coloured surface, which are the traces of a pigmentary syphilide.

Jan. 20.—Appetite is good, the digestive functions are unaltered; the patient eats two meals, and an antisyphilitic treatment was given: iodide of potassium and 2 of Sédillot's pills.^a To avoid stomatitis an alum gargle was ordered.

Feb. 2.—The arm is better; notable improvement under the influence of the iodide.

Feb. 6.—The patient commenced to walk, although the leg was dragged after her; the arm still weak. Quinine wine; every other day a sulphur bath. The following days her condition improved, the leg is dragged less and less, and the arm commenced to be useful, although weaker than the healthy one.

March 6.—The patient asks leave to go, although imperfectly cured. She returned some time after for the same symptoms, but this time they are less severe, and the patient left after a short sojourn, imperfectly cured it is true.

CASE IV.—C. L., aged forty-three, labourer, admitted Feb. 17, 1889. No anterior disease, excepting a chancre in 1875, for which he was treated at this hospital (Hôtel Dieu). At thirty-five he had a nasal polypus, obliging an operation. Since then he has had frequent and prolonged headaches, especially in the frontal region. His hair fell out, but he pretends that this is hereditary in his family. In his youth he had an abscess in the external angle of the orbit; this was incised, and the cicatrix prevents him from completely opening the lids of the right eye.

Feb. 12, that is to say, five days before entering the hospital, he perceived that his right leg was weak, likewise the arm of the same side, which he employed with difficulty; his leg dragged, and the arm felt heavy. On admission the right side was found paralysed nearly completely; the left upper eyelid drooped, closing the eye; the globe was slightly turned towards the external angle; the pupil of the right eye was more dilated than the left; binocular vision was impossible; diplopia existed; speech was difficult and hesitating, the patient speaking with right half of the mouth, the left being quite immovable; the uvula was deviated to the left; the soft palate appeared relaxed. For two days the patient has not been able to take food; when he does, either solid or

^a Sédillot's pills are thus prescribed:—

R. Mercurial pomatum, 3 grammes.

Medicated soap, 2 grammes.

Powdered liquorice, 1 gramme.

M., and make 60 pills.

—Translator's Note.

liquid, he is taken with a violent cough, oppression, respiration ceases, and the liquid or food, in greater part, returns by the nose. Sensibility is everywhere preserved. On the lower part of the thorax and abdomen were brownish-yellow spots of pityriasis versicolor, which disappear, so the patient said, after one sulphur bath. In the left groin a cicatrix of a bubo was found, which is retracted, white, and puckered.

Feb. 12.—As the patient could swallow nothing, alimentation by means of an œsophagus sound was tried, but the patient could not stand this, as attacks of suffocation followed, so it was abandoned. When the patient is asked to walk, he is obliged to be supported to keep from falling, the vertical posture is impossible. No muscular weakness; the patient squeezes with the same force with the right as with the left hand. Nothing abnormal in the heart or thorax; urine normal. Treatment consists in mercurial frictions and a purgative injection.

Feb. 20.—The patient has been able to drink a little and to take nourishment by a pipette. The eye opens a little, and the paralysis of the ocular motor nerve is improving. Blister applied to the neck, mercurial frictions in the armpits and groins.

Feb. 23.—The patient continues to drink, employing a pipette, and takes some thin soup.

Feb. 27.—Notable improvement. Two of Sédillot's pills, 2 grammes of iodide of potassium in a mixture. Gargle, with 4 grammes of chlorate of potassium.

March 1.—Same condition.

March 10.—Improvement continues; the eyelid can be raised quite easily; speech is now free and clear. The patient takes food naturally. No more dysphagia. Diplopia still exists, but the patient avoids this inconvenience by closing one of the eyes.

March 20.—Patient walks well, and his agility has returned; the diplopia only persists. The patient uses spectacles, with a piece of paper stuck over one of the glasses, so that by this means he can work and read without getting tired.

April 5.—The patient asks to leave. Speech is free; the mouth still is slightly deviated, and diplopia persists. This patient I saw not long ago (four or five months after leaving the hospital); he has taken up his work without suffering. However, in the evening he cannot distinguish objects, and sometimes he has vertigo when he looks too long at the same thing. He always wears his spectacles. Unfortunately he has neglected a little the treatment that he was advised to continue.

WORKS CITED.

[The numbers correspond to those in the text.]

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| (1) "Revue de Médecine," 1881. | (4) "Traité de la Syphilis." |
| (2) "Archives Gén. de méd," 1884. | (5) Rabot. Loc. cit. |
| (3) Rabot. "Paris Thesis," 1875. | |